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Pages from the
Biennial Report of

the

STATE SUPER-
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PUBLIC IN-
STRUCTION
of Indiana

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FRANK L. JONES, *Superintendent.*

INDIANAPOLIS.

W. B. BEEFORD, CONTRACTOR
FOR STATE PRINTING AND
BINDING, 1901.

THE RURAL SCHOOLS

PAGES FROM THE BIENNIAL REPORT

OF

THE STATE SUPERINTENDENT OF PUBLIC
INSTRUCTION OF INDIANA

1900

FRANK L. JONES, Superintendent

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V. The Rural Schools.

- (a) The Problem.
- (b) Transportation of Pupils.
 - 1. In Indiana.
 - 2. In other States.
- (c) Enrichment of Rural School Life.
- (d) Rural School Architecture, Sanitation and Decoration.

THE RURAL SCHOOLS.

[During the last two years the State Department of Education has addressed itself largely to affairs pertaining to the rural schools, and by personal visitation, inspection and inquiry, has come into close contact with the work of these schools. The visits will be continued during the next two years, and an attempt will be made to visit some of the schools in each county not already visited.]

In a paper read before the National Educational Association in Charleston, S. C., July, 1900, Dr. William R. Harper, of Chicago University, said that there are two large problems before the American people in relation to their schools, viz., "(1) The problem of the small college, and (2) the problem of the rural school." In the fields of higher education the former has engaged the attention of college men for a decade or more; the latter is the important question of the hour among common school teachers, trustees, and superintendents. In thus expressing himself, Dr. Harper reduces to a careful statement the essence of most of the recent school discussions throughout this country, and in the use of the word "problem," proposes something for solution.

Indiana's problem is, first, one of the disposition of the small rural schools; second, one of the enrichment of the rural school life; and third, one of the sanitary and artistic improvement of our rural schoolhouses.

(a) THE SMALL SCHOOL.

Twenty years ago public education in rural communities was conducted upon a curriculum composed largely of the common branches. The teaching of physical geography and algebra in addition to the common branches was not uncommon, though it was not general. Great credit was given a township for its progressiveness and advancement. High schools were not established except in the larger cities. Young men and young women

attended the rural schools until they were twenty-one years of age, and repeated annually the work of the advanced grades, thus often filling those schools with as many as seventy-five pupils under the direction of a single teacher whose business often degenerated into "keeping order." We need not turn to the statistical files of the department to prove that the large rural school was the rule and not the exception, such a condition being within the recollection of all mature people. In the decade 1870-1880 the average number enrolled in each school district was 54. During the next two decades a constant decrease in the average is reported. The whole time of prominent educators was given to the rural common school. The favorite expression of one of Indiana's foremost State Superintendents in both oral and written statements was, "Establish a rural school at every cross-roads." This stimulus to rural school-house construction multiplied those schools unduly, and many of them need to be abandoned at this time. With the development of the course of study, the grading of schools, the introduction of new methods of teaching, and the growth of high schools, the young men and young women were sent to the new secondary schools in the villages, thus relieving the common school of many of its students; furthermore, the growth of cities demanding and attracting laborers thereto, and the demand for fewer laborers on the farm upon the introduction of improved machinery, reduced the number of young, vigorous, family producing men and women in the country; again, it is argued that there are not many large families of children in the country as in former years, and it is not difficult to prove that such is true. An examination of a large number of school registers throughout the State during the last eighteen months shows in very few instances more than two pupils from one family, and in only one instance were there as many as four pupils enrolled from a single home. Two decades ago, the school registers often contained the names of five or six pupils from one home, and it was not as uncommon to find two or more enrolled from a home as it was to find only one. All of these conditions and movements have led not only to a lessening of rural school attendance, but have, in many cases, left so few pupils that we can not maintain with profit, either financial or social, a great many of these schools. The great evil of the small rural school lies in its non-social character. It is wholly unable

to furnish each of its pupils that educative influence that comes from association with many of the same age and same degree of advancement; it can not have, in many classes, enough of honest and helpful competition to establish a standard to which many a bright pupil would raise himself, and fails therefore to bring from him that supreme effort which develops and ennobles, and which comes only from a vigorous contest with his fellows. The humdrum and monotony of a recitation in a one-pupil class is discouraging to both pupil and teacher. Not only is the mental work of the school thus impaired, but the lack of enough pupils to organize a game on the schoolhouse yard prevents adequate exercise and tends to make morbid, selfish and pessimistic all who live in its atmosphere—the deadly quiet and inactivity of the small school kills the spirit. Professor Hinsdale makes a clear statement in the following words:

The importance of this element in the rural school problem becomes obvious at a glance. In populous districts fewer schools and districts relatively are called for, while, at the same time, owing to the larger numbers and the more varied attainments of the pupils, the system can be more fully developed. The school and the home, under the present system, can not be far apart; otherwise children will attend the school with difficulty, or not at all. Once more, the interest and enthusiasm of pupils and teachers depend directly upon the number and the ability of the pupils present. For the majority of children individual instruction, or anything closely approaching it, is not to be commended. Aristotle condemned such instruction on political grounds. It may also be condemned on pedagogical grounds. Children need the inspiration of numbers. Besides, numbers contain ethical value. As a rule, you can no more make a good school out of a half dozen pupils than you can make a powerful galvanic battery with one or two pairs of plates.

The per capita cost in these small schools is not only much too large, but is continually increasing. In 1879 the cost of education per capita was as follows:

In townships	\$6 21
In towns	5 21
In cities	7 48

In 1899, twenty years later, the cost was:

In townships (per capita).....	\$10 50
In towns (per capita).....	11 10
In cities (per capita).....	7 07

These tables are of more than usual interest on this point, and present to the taxpayer a strong argument for a solution of the problem of the small school. It will be observed at once that the per capita cost of education is constantly increasing in the country and towns, and decreasing in the cities. This condition in the rural school arises wholly from the prevalence of small schools. There were as many rural schools in 1899 as in 1879, the salaries in the former are not substantially different from those in the latter, the investments in schoolhouses and appliances would about equal, but the attendance in them has constantly decreased. This condition makes necessary an expenditure for teachers, fuel, apparatus and repairs for the small school of to-day equal to that of the large one of two decades ago. In the towns the increase is due quite largely to the establishment and equipment of high schools of small enrollment. Nearly all cities show congested schools, making necessary many pupils under the direction of each teacher, thus reducing the per capita cost. Add to this a saving in fuel, repairs, buildings and appliances, and the reduced cost of education in cities is explained.

The following table gives in detail the number and distribution of small schools in Indiana:

SMALL SCHOOLS IN INDIANA.

COUNTIES.	Attendance of Five Pupils or Fewer.	Attendance Between Five and Ten Pupils.	Attendance Between Ten and Fifteen Pupils.	Attendance Between Fifteen and Twenty Pupils.	COUNTIES.	Attendance of Five Pupils or Fewer.	Attendance Between Five and Ten Pupils.	Attendance Between Ten and Fifteen Pupils.	Attendance Between Fifteen and Twenty Pupils.
Adams . . .	1	1	6	23	Martin . . .		5	18	22
Allen . . .	2	5	10	25	Miami . . .		2	8	20
Bartholomew . . .		9	28	22	Monroe . . .		2	30	78
Benton . . .	1	12	20	30	Montgomery . . .	3	14		
Blackford . . .		2	2	2	Morgan . . .			16	27
Boone . . .		1	20	45	Newton . . .	1	21	49	32
Carroll . . .	5	9	40	55	Noble . . .		12	17	34
Cass . . .	3	10	20	30	Ohio . . .			3	5
Clarke . . .	2	12	25	30	Orange . . .			2	5
Clinton . . .		10	35	60	Parke . . .	1	5	12	35
Crawford . . .			12	31	Perry . . .	6	12	10	10
Daless . . .		2	17	13	Pike . . .				
Dearborn . . .	6	10	20	8	Porter . . .	3	9	23	48
Denton . . .		8	23	25	Pulaski . . .		10	20	66
Dekalb . . .		6	30	10	Putnam . . .		4	10	20
Dubois . . .		3	8	10	Randolph . . .		16	12	35
Elkhart . . .	6	7	36	57	Ripley . . .			16	19
Floyd . . .		1	3	8	Rush . . .		9	18	25
Franklin . . .	2	10	14	49	Scott . . .			5	4
Grant . . .			3	20	Shelby . . .	43	56	34	23
Greene . . .	3	10	30	40	Spencer . . .			18	31
Hamilton . . .	2	10	8	10	Starke . . .			3	8
Hancock . . .		4	11	25	St. Joseph . . .	2	4	20	60
Harrison . . .	6	25	40	76	Steuben . . .		3	8	16
Hendricks . . .		4	9	32	Sullivan . . .	1	5	11	25
Henry . . .		1	10	17	Switzerland . . .			15	17
Howard . . .		1	4	7	Tipppecanoe . . .	2	16	19	35
Huntington . . .		2	5	14	Tipton . . .		2	3	11
Jackson . . .	1	4	15	20	Vanderburgh . . .			12	30
Jasper . . .		13	27	35	Vermillion . . .				
Jay . . .		2	9	13	Vigo . . .	1	7	17	28
Jefferson . . .		2	14	37	Wabash . . .		5	42	51
Jennings . . .		4	18	37	Warren . . .	2	18	35	50
Johnson . . .	1	1	10	75	Warrick . . .			3	15
Knox . . .			10	22	Washington . . .		1	3	163
Kosciusko . . .		2	14	23	Wayne . . .		1	2	
Lagrange . . .	1	5	15	29	Wells . . .	1	1	5	8
Laporte . . .		5	32	31	White . . .	1	22	23	37
Lawrence . . .		2	15	60	Whitley . . .		4	21	18
Madison . . .		1	10	20					
Marshall . . .		2	12	40	Total . . .	103	487	1,253	2,332

We see at once from the table above that the small schools are more numerous than most citizens and school men knew. That there are within the State 108 schools with fewer than five in average daily attendance; 487 schools with fewer than ten in attendance; 1,253 schools with fewer than fifteen in attendance; 2,332 schools with fewer than twenty in attendance, making in all (including counties not officially reporting) more than 4,200 schools in each of which there is an attendance too small for vigorous and

highly profitable work, is a matter of no little importance, either educational, social or financial. At the average rate of wages paid rural teachers, and for the legal minimum term of six months, the cost of instruction alone in 108 schools is \$48 per capita; in 487 schools, \$24 per capita; in 1,253 schools, \$16 per capita; in 2,332 schools, \$12 per capita. This calculation does not take account of the building improvements, cost of fuel, janitor service, repairs and apparatus. These items added to the cost already given would increase the amount considerably.

Professor Upland, of Wisconsin, says: "The decline of the rural school is so real that time need not be spent in rehearsing the facts. It is well known that not only in Wisconsin, but also in other States, the migration of population has been toward the cities, so that while at the beginning of the century, 96 per cent. of the population lived in the country; at the end, less than 70 per cent. were left.

"In the last thirty-five years the rural population of New York has decreased one-third. Of the 11,000 school districts, nearly three thousand, or more than one-fourth, have six pupils or less, and two-thirds have less than 21. Vermont has 153 schools with less than seven pupils each. Maine has 1,000 with less than 13 pupils each. Wisconsin has 183 with less than six; 858 others with less than eleven; with a total of 3,222 with less than 21 each."

No school can claim good conditions for work if it contain fewer than twenty-five pupils; nevertheless, one-half of the rural schools of Indiana are in operation with numbers ranging from three to twenty-five pupils in average daily attendance.

The problem of the small school, therefore, is a real one, and each year becomes increasingly difficult. It is pressing itself more and more upon our attention and now requires a solution. In these schools we must lessen the cost; we must enlarge the classes; we must improve the school socially and athletically. The question now arises, how shall we proceed to accomplish this much-needed reform. Upon one proposition we must all agree at once, namely, that our pupils must be collected into larger groups. We know that this means the abandonment of many schoolhouses, consolidation of the schools, longer distances to school, and the transportation of pupils. It means the abandonment of the traditional "home-school." It does not matter how much we deplore

the condition which makes consolidation of schools necessary, the fact remains that it is the only rational solution of the question that has been offered. Before entering upon the details of the problem of consolidation and transportation it might be well to say that the thing most to be avoided is the destruction of rural life and the rural view. The very strong movement which leads to the centralizing of schools in towns and cities is to be deplored and should be avoided if possible. The preservation of the conservatism of the farm; the simplicity of its manners and dress; the ruggedness of its life; the peace, quiet and contentment of its homes; its formation of good habits; its absence of vice; its opportunities for physical development; and its making of men and women of clear consciences, are items which argue eloquently for rural life and make its preservation of vital necessity to the welfare of our nation. It must not be required that the problem be solved by consolidating about the towns, but that consolidation which is distinctly rural, is expedient, economical and wise. Some of the best graded schools in the State are at a great distance from either cities, towns or villages.

The following argument, taken from the Massachusetts Report of 1893-94, presents the case clearly:

The leading arguments in favor of consolidation are:

1. It permits a better grading of the schools and classification of pupils. Consolidation allows pupils to be placed where they can work to the best advantage; the various subjects of study to be wisely selected and correlated, and more time to be given to recitations.
2. It affords an opportunity for thorough work in special branches, such as drawing, music, and nature study. It also allows an enrichment in other lines.
3. It opens the doors to more weeks of schooling and to schools of a higher grade. The people in villages almost invariably lengthen the school year and support a high school for advanced pupils.
4. It insures the employment and retention of better teachers. Teachers in small, ungraded schools are usually of limited education, training, or experience, or are past the age of competition. The salaries paid in cities and villages allow a wide range in the selection of teachers.
5. It makes the work of the specialist and supervisor far more effective. Their plans and efforts can all be concentrated into something tangible.
6. It adds the stimulating influences of large classes, with the resulting enthusiasm and generous rivalry. The discipline and training obtained are invaluable.

7. It affords the broader companionship and culture that come from association.

8. It results in a better attendance of pupils, as proved by experience in towns where the plan has been thoroughly tried.

9. It leads to better school buildings, better equipment, a larger supply of books, charts, maps, and apparatus. All these naturally follow a concentration of people, wealth, and effort, and aid in making good schools. The large expenditure implied in these better appointments is wise economy, for the cost per pupil is really much less than the cost in small and widely separated schools.

10. And, again, it quickens public interest in the schools. Pride in the quality of the work done secures a greater sympathy and better fellowship throughout the town.

Mr. Edson reports that the following objections have been made in Massachusetts:

1. Depreciation of property; decreased valuation of farms in districts where schools are closed.

2. Dislike to send young children to school far from home, away from the oversight of parents; and to provide a cold lunch for them rather than a warm dinner.

3. Danger to health and morals; children obliged to travel too far in cold and stormy weather; obliged to walk a portion of the way to meet the team, and then to ride to school in damp clothing and with wet feet; unsuitable conveyance and uncertain driver; association with so many children of all classes and conditions; lack of proper oversight during the noon hour.

4. Insufficient and unsuitable clothing; expense to parents of properly clothing their children.

5. Difficulty of securing a proper conveyance on reasonable terms, or, if the parent is allowed compensation, of agreeing upon terms satisfactory to both parties, parents and town officials.

6. Local jealousy; an acknowledgment that some other section of the town has greater advantages and is outstripping any other locality.

7. Natural proneness of some people to object to the removal of any ancient landmark or to any innovation, however worthy the measure or however well received elsewhere.

To these objections Mr. Edson, who is one of the most competent of authorities, replies:

The first one is more imaginary than real, for any level-headed man with children to be educated will place a higher value on the quality of the schools and the school spirit in the community than upon the number and accessibility of the schools. Experience has demonstrated the fact that property in towns committed to this plan has appreciated rather than depreciated in value.

The second and third objections are the most serious. It behooves school authorities to see that the danger is reduced to a minimum. Suitable conveyances, covered, should be provided, and competent, careful drivers selected. No risks should be taken. During the noon hour some teacher should remain with the children who carry luncheon.

The fourth, fifth, and sixth objections have no great weight. The last one has great influence with those people who choose to live, move, and

die as did their ancestors, on the theory that this is the last generation, and that any special efforts at improvement are just so much more than is wise or necessary.

Professor Upham's investigations led him to say:

1. The health of the children is better, the children being less exposed to stormy weather, and avoiding sitting in damp clothing.
2. Attendance is from 50 to 150 per cent. greater, more regular, and of longer continuance, and there is neither tardiness nor truancy.
3. Fewer teachers are required, so better teachers may be secured and better wages paid.
4. Pupils work in graded schools and both teachers and pupils are under systematic and closer supervision.
5. Pupils are in better schoolhouses, where there is better heating, lighting and ventilation, and more appliances of all kinds.
6. Better opportunity is afforded for special work in music, drawing, etc.
7. Cost in nearly all cases is reduced. Under this is included cost and maintenance of school buildings, apparatus, furniture and tuition.
8. School year is often much longer.
9. Pupils are benefited by widened circle of acquaintance and the culture resulting therefrom.
10. The whole community is drawn together.
11. Public barges used for children in the daytime may be used to transport their parents to public gatherings in the evenings, to lecture courses, etc.
12. Transportation makes possible the distribution of mail throughout the whole township daily.
13. Finally, by transportation the farm again as of old becomes the ideal place in which to bring up children, enabling them to secure the advantages of centers of population and spend their evenings and holiday time in the country in contact with nature and plenty of work, instead of idly loafing about town.

We are in the midst of an industrial revolution. The principle of concentration has touched our farming, our manufacturing, our mining, and our commerce. There are those who greatly fear the outcome. There were those who prophesied disaster and even the destruction of society on the introduction of labor-saving machinery. We have adjusted ourselves to the new conditions thus introduced. Most of us believe that we shall again adjust ourselves to the new industrial conditions. The changes in industrial and social conditions make necessary similar changes in educational affairs. The watchword of to-day is concentration, the dominant force is centripetal. Not only for the saving of expense but for the better quality of the work must we bring our pupils together. No manufacturing business could endure a year run on a plan so extravagant as the district system of schools.

(b) TRANSPORTATION OF PUPILS.

WHAT INDIANA IS DOING IN THE TRANSPORTATION OF PUPILS.

In July, 1900, the Superintendent of Public Instruction in Indiana sent to the County Superintendents the following inquiries, and below may be found their answers, all of which gives in detail the status of the work in Indiana. Forty counties which have already begun the work of collecting pupils into larger groups by transporting them:

QUESTIONS.

1. *What is the sentiment among your Trustees relative to abandoning small schools and consolidating the schools of the townships?*
2. *In what townships of your county has consolidation been tried, and with what effects?*
3. *What do you find to be the advantages and the disadvantages of the system if you have tried it?*
4. *What do the patrons think of the plan, where it has been tried?*
5. *How far do you transport pupils?*
6. *Give briefly the history of any one experiment in the transportation of pupils.*
7. *General remarks.*

The answers received were as follows:

ANSWERS.

ADAMS COUNTY—

1. They have talked the matter over at different times. They came to the conclusion that bad roads in Adams County will be a great drawback. I believe the idea of consolidation is a good one, and am anxious to have it tried here. At present the sentiment of Trustees is somewhat against it from the standpoint of bad roads.
- 2, 3, 4, 5, 6 and 7. No answer.

ALLEN COUNTY—

1. We have not discussed this subject in any of our board meetings, but I am sure that a majority of the Trustees feel that we are not yet ready to vacate very many of our schools. Transportation depends so largely upon the condition of roads that in many places this is not yet feasible.
2. Wayne Township, Allen County, has transported children for two years in one district. It is a case in which a small school of about twenty pupils was closed and the children transported to an

adjoining school, a distance of two miles. I asked the teacher to make a separate report of their attendance. It proved to be 10 per cent. better than that of those not transported.

3. Our experience is too limited to allow a valuable opinion. It seems to improve attendance, prevents tardiness. The pupils are much less exposed to the inclemencies of the weather, being in closed rigs which are heated in severe weather. The saving amounts to about one dollar per day.

4. They are pleased.

5. Two miles.

6. No answer.

7. I am of opinion that there is danger in the system when carried too far. One township grade school large enough to accommodate all the children in a township, in my judgment, will embrace too much territory and contain too many pupils for the best results.

BARTHOLOMEW COUNTY—

1. Generally in favor of continuing local schools as long as a reasonable number of pupils support the school.

2. Transportation has been tried in one township only, Columbus Township, with very satisfactory results.

3. Pupils of one school district transported to an adjoining school district—

Advantages:

a. Better teaching.

b. Satisfied pupils.

c. Satisfied parents.

d. Satisfied school officials.

e. Net saving of about \$35.00 per month.

4. See, No. 3.

5. About three miles.

6. Experiment referred to in No. 3 has been in operation for the last two years, with results as indicated.

7. Personally we believe that local schools should be continued so long as enough pupils attend to keep up a reasonable interest in the school. (The public school, as the local institutional unit, is the hope of our country.) After that, consolidation.

BENTON COUNTY—

1. Our Trustees all favor it.

2. Bolivar, Pine and York townships, with good effects.

3. The advantages are that it gives the pupils of the smaller schools better opportunities for classification, gradation and instruction, and financially is a saving of fully 50 per cent. of the amount it would cost to keep open the schools that are closed.

4. The sentiment for and against the plan is about equally divided.

5. From two and one-half to three and one-fourth miles.

6. One school that has been closed for three years formerly cost the township about \$50 per month, or \$400 for a term of eight months, the usual length of schools in that township. The schoolhouse has been

sold and the pupils have been transported to other schools for \$25 per month.

7. It is very difficult to get the consent of the parents to close schools.

BLACKFORD COUNTY—

1. Favorable to it.

2. Licking Township. Good effect.

3. Avoiding dead schools, as all small schools are apt to be, and a financial saving of \$150 per year.

4. Satisfied.

5. Two and one-half miles the farthest.

6 and 7. No answer.

BOONE COUNTY—

1. I think the sentiment among Trustees favors the change mentioned.

2. In none.

3. The county has no examples.

4. Have not tried it. The patrons strenuously oppose its inauguration.

5 and 6. No answer.

7. The Trustees have so far allowed the patrons' opposition to prevent the abandonment and consolidation of schools. The township reform law tends to weaken the purpose of the best and most enterprising Trustees.

CARROLL COUNTY—

1. It is the prevailing opinion among the Trustees of this county that small schools—those with an enrollment of ten to fifteen—should be abandoned. They also think that much better school work could be done at less expense by consolidating all the schools of the township. I think they are in favor of it only where a graded school is already established near the center of the township and where the roads are good.

2. Transportation has not been tried at public expense at all. In Jackson Township several families take their children to Flora and Camden at their own expense, and some other families are paid something by the township. In these instances the children do not wish to go again to the country nor do the parents desire a change.

3. In the cases under "2" there is a financial gain of about \$500, as two schools were abandoned. Pupils transferred to Flora cost about \$75. I should say there is a gain of \$400. The advantage of the graded school over the country schools can not be estimated. It is severe on these children to make the drive on the extremely cold days. They don't complain much, however.

4. They are in every instance well pleased.

5. From two to four miles.

6. A school meeting was held in a certain district to see whether the plan would be acceptable. Patrons came prejudiced, thinking

we were going to rob them of their school and build up the school at Camden. They were almost unanimously against us. We set forth the plan, but they raised all forms of objections and never would submit. Some now come to Camden at their own expense and are well pleased.

7. Good roads would make it practicable. The results would be incalculable in the way of better training for the children. It would be a great money saving, I think.

CASS COUNTY—

1. I think that there will be at least four schools abandoned this year. The Trustees are nearly all favorable, but there is some opposition among the patrons. It has never been tried in Cass County.

2, 3, 4, 5, 6 and 7. No answer.

CLAY COUNTY—

1. The sentiment is gradually growing in this county. It is limited, however, to abandoning the small schools.

2. None have tried it.

3, 4, 5 and 6. No answer.

7. In many townships the relocating of schoolhouses would lead to a saving of one or two schools in each township so adjusted. At this time the above seems to be the need along the line of abandoning schools in this county.

CLARK COUNTY—

1. They are generally in favor of it.

2. Charlestown Township. Good effects.

3. Advantages: Pupils have the advantage of a longer term of school, a better graded school, and usually (not always) of a better teacher. It is also a financial saving. Under very unfavorable conditions it saved this township \$75. Disadvantages: It has a tendency to make less attractive and inviting the life of rural people by destroying their schools.

4. They are in favor of it.

5. Two, three and four miles.

6. One school abandoned in Charlestown Township and five pupils transported to town of Charlestown. Patrons pleased, pupils in a better school. Other township schools run longer. Saving to township that transported.

7. No answer.

CLINTON COUNTY—

1. Most of them are in favor of it, but only where the roads are good, the schools to be abandoned are small, and all conditions favorable. I found three schools this year with an attendance of six pupils. I shall recommend to the Trustees that these schools be abandoned.

2. Owen, Perry and Ross townships, with very good results. In the first two, hacks were furnished. In Ross Township, the Trustee paid the parents to furnish conveyance for their children. The latter

plan seems to give the better satisfaction, as the children can bundle up and start at once directly from home.

3. Advantages: (1) Better school. There are more incentives to study and more rivalry among pupils in a class of eight or ten than in a class of one, and usually the good teacher is selected for the larger school, while "any one" can teach a small school. (2) A saving financially. Counting interest on the investment, the transportation will cost no more than the running expenses of the school, exclusive of the teacher's salary. Thus a saving of from \$1.65 to \$2.50 per day.

4. I have found no serious objections to the plan. Some complaint has been made that the children are exposed too much in bad weather. But in the face of this a few families are sending their children away from a district school (within three-fourths of a mile) to a graded school nearly four miles away.

5. From two and one-half to four miles.

6. A hack from Colfax made the trip morning and evening, taking the pupils of a small district two miles north of Colfax to another small school four miles north of Colfax, thus combining two small schools. Last year the Trustee allowed the patrons of the school two miles north of Colfax to send to either of the other schools, and he paid their transportation, the patron furnishing his own conveyance. This plan seems to be preferable.

7. This is a good plan in some cases; but I believe it will be a long time before the sentiment in favor of the cross-roads schoolhouses changes. When the roads are good and the school is small, or the pupils want high school privileges, the plan is all right. But I seriously doubt whether a radical change to this system would bring about generally good results.

DECATUR COUNTY—

1. There is no active interest manifested. Mr. O. B. Trimble, of Clay Township, thinks the plan a good one, and would attempt it, if he had time to complete the work. Mr. C. C. Lowe is also an advocate of the plan, but his township is so arranged that it is impracticable. Roads run to Greensburg, with very few convenient cross-roads. To consolidate schools would require exceedingly long drives. Other Trustees have had no special interest in a general plan of "consolidation."

2. In Fugit Township one school was abandoned in 1898-99. Pupils were transported, but the country school is open again this year.

Clay Township abandoned two schools in 1898-99, and two in 1899-1900. No transportation was needed except in one school this last year. It was offered there, but not accepted.

In Adams and Jackson townships, each, one school abandoned, 1898-99. No transportation needed.

Clinton Township abandoned one school in 1899-1900, and provided transportation for from six to ten pupils.

(These conditions remain at present as stated above.)

3. It has not been sufficiently tried to give fair basis for judgment.

4. There is quite a general feeling among patrons of rural communities that they are entitled to school privileges at home. In

communities where schools are small, the people are scattered over considerable territory. Pupils would have to walk, in some cases, about as far to the transportation wagon as they now have to walk to school. In two or three of the cases above cited, opposition was strong. There is a general anxiety, however, on the part of Trustees, to close the smaller schools.

5. In Fugit Township, from two to three miles. In the proposed plan for Clay Township, from three to four miles. In Clinton Township, about three miles.

6. No answer.

7. I think the best plan here would be a gradual development of the system in two or three townships. Small schools in a few cases could be transported to others without overcrowding. In three or four townships, a partial consolidation could be easily put into effect. The condition of roads has been a hindrance to even fair consideration of the plan, but three townships now have petitions filed for extensive "pike" systems.

CRAWFORD COUNTY—

1. Consolidation of schools has never been tried in this county. Two Trustees have abandoned a district each and the pupils enter the nearest adjoining district without transportation.

The idea is considered a good one but not practicable in this county, owing to poor roads and so many hills and small farms.

2, 3, 4, 5 and 6. No answer.

7. I believe if Crawford County could have good graveled roads, which I think she will have before long, the solution would be solved in this county.

DEKALB COUNTY—

1. As far as I am able to learn they favor it. I think they would favor it, were it not for the expense of building new houses.

2. It has not been tried, though it has been talked of quite favorably in a few instances. The sentiment is growing in favor.

3. Not tried.

4, 5 and 6. No answer.

7. It seems to me that we are rapidly approaching the concentration plan.

DELAWARE COUNTY—

1. The sentiment is universally in favor of consolidation of small schools. There is not a dissenting voice in Delaware County among the Trustees. The only question to be determined is how fast to push the plan in face of some opposition among some few patrons who are content to let matters rest where we now have it.

2. In Hamilton and Perry townships, with the best results claimed for the change. Some economy, regularity in attendance, better health of pupils, better gradation and classification.

3. Better gradation and classification, better teaching, better attendance among those conveyed, better health of children, due to care in getting to and from the school. Saving of money where two schools can be changed.

\$300 in one township—one school abandoned.

\$300 in another township—one school abandoned.

\$600 in another township—two schools abandoned.

In the townships where there is some conveyance the saving in teacher must be applied to conveyance. Where the two schools are conveyed the saving is twenty-five cents per day.

4. The plan seems to give entire satisfaction thus far.

5. Some are transported from four to five miles.

6. Two schools abandoned in Hamilton Township and children conveyed. Pupils in each school, ten. Cost of transportation, \$1 and \$1.10 per wagon. Cost of teacher under old plan, \$2.25 each. One additional teacher required at the consolidating point. Number of departments, three. Township high school possible. Satisfaction given, good. Sentiment in township, very favorable. Excellent prospects for the future.

7. No answer.

DUBOIS COUNTY—

1. They favor it, but citizens oppose it to such an extent that no Trustee in this county is likely to move hastily in the matter.

2. None.

3. 4, 5, 6 and 7. No answer.

FAYETTE COUNTY—

1. The Trustees are favorable to the above named plan.

2. In only one township, Harrison. The patrons of two of the schools abandoned were very strong against it at first, but most of them are now satisfied and like the plan. If they had school in all their buildings they would have had three schools with an enrollment of ten or twelve pupils each. Now no school has an enrollment of less than twenty. The teachers are pleased and I think the schools better.

3. Advantages: First, larger schools, causing pupils and teacher to be more interested. Second, more regular attendance. Third, patrons are not bothered with taking their children in bad weather, but have them taken.

Financial statement:

Cost last year, 6 teachers, \$45 each per month, 6½ months....	\$1,755
Cost this year, 4 teachers, \$40 per month each, 7 months.....	\$1,520
Cost this year, 1 principal, \$80 per month, 7 months.....	560
Cost this year, 2 wagons, \$20 per month each, 7 months.....	280

Total \$2,360

\$2,360—\$1,755=\$605, extra cost to have one-half month more school and have a high school. The township did not have a high school until this year. I do not know whether there will be any saving in special school money or not.

4. No answer.

5. Three miles is perhaps the farthest and as the wagon takes all on its road some only a short distance.

6. Pupils in district No. 6, Harrison Township, Fayette County, transported to district No. 7, in said township and county. The first

day the wagon went to the homes of the children, but as the parents were opposed to the plan they would not let the children go to school. The Trustee told the driver to go after them every day until he told him to stop. The Trustee then came to see the County Superintendent, and it was decided to send the Truant Officer to see the parents. In the afternoon of the second day the Truant Officer made his visits and on the morning of the third day all the children rode to school and have been doing so all term.

7. First. It is a good plan when a township has too many schools. Fayette County has about ten too many schools.

Second. It is very difficult to get parents to see the advantages.

Third. Trustees do not care to do what the patrons do not want done.

Fourth. I think new Trustees will be more willing to act than old ones.

FLOYD COUNTY—

1. The sentiment is very much in favor of so doing.

2. It has not been tried in this county.

3, 4, 5 and 6. No answer.

7. This county is so hilly and the roads for the most part are so rough that I fear that the transportation system would not be successful. However, there is a growing feeling that it would be best.

FOUNTAIN COUNTY—

1. In favor of it as far as practicable.

2. Richland and Van Buren. Good. Fulton will try it next year to their new graded school.

A great many children drive themselves several miles in all the townships.

3. There are no disadvantages except bad roads. There is a saving, but can not give the figures.

4. They like it after trying, but generally oppose it before trying.

5. Three and four miles.

6 and 7. No answer.

FRANKLIN COUNTY—

1. Trustees favor the plan. The people are not so favorable. They have no real reason, but give the "stock" argument.

2. Not tried.

3, 4, 5 and 6. No answer.

7. The sentiment is growing in favor of consolidation.

FULTON COUNTY—

1. The majority favor it.

2. None at expense of county.

3. (1) Better grading. (2) Thorough work. (3) The teaching of special branches. (4) Better teachers. (5) Large classes. (6) Broader companionship and culture. (7) Better buildings, roads, apparatus, etc. (8) Creates a good school sentiment.

(1) Lack of proper conveyances. (2) Many patrons object to children going so far from home. (3) Riding in hacks with all classes of children.

4. Would have no other. They are well pleased.

5. We transport none. They all walk or drive. Five miles.

6. No answer.

7. I think the majority of the people in Fulton County favor centralization.

GIBSON COUNTY—

1. Favorable. No gravel roads in the county and for this reason the plan has not been tried.

2, 3, 4, 5 and 6. No answer.

7. I believe the plan will be satisfactory in a short time. Gibson County is now considering the road question, and as soon as the roads will permit we shall be ready to try the experiment.

GRANT COUNTY—

1. The Trustees are very generally in favor of doing away with the small district schools and sending to larger and more inspiring ones.

2. In Franklin, with good success.

3. It places the students in schools where there are more pupils and greater interest. The teacher seems to be inspired to do better work. In the small school generally the interest is dead. It is very clearly a financial saving to the township. The pupils are taken to school and brought back by a competent person, and when so many come together it lessens the chance for children to lower their morals. It is unsafe to let a boy and a girl of this age walk home together for any length of time. You see what I mean.

4. At first they objected, but are now seeing the benefits.

5. Three miles.

6. In Franklin Township the Trustee did away with three schools and in two of them the pupils were close enough to be as well accommodated in regard to distance as they were before the abandonment. One school was out of reach of others, and a small village wanted a new school, and it is these he hauls to a centrally located graded school. The pupils of the other two schools still walk to other school districts.

7. At the next meeting of the Trustees one of them, Mr. Slater, will read a paper on the subject. I think now we will abandon a number of our schools next year. We will simply abandon them temporarily. I think the plan a good one.

GREENE COUNTY—

1. Sentiment not favorable to abandonment.

2, 3, 4, 5, 6 and 7. No answer.

HAMILTON COUNTY—

1. We have tried the plan in a number of cases, and it is very satisfactory to officers and patrons. Under the plan we have vacated twenty little schools and saved hundreds of dollars expense, and the

pupils had better school privileges. There should be a direct law on the matter to allow Trustees and Township Councils to do as they think best in such instances.

2. Adams, Clay, Delaware, Jackson, Noblesville, Washington, Wayne and White River. In some cases the Trustee furnished a wagon, in others an allowance was given some patron to do the transporting. B. C. Sherrick, of Washington Township, has vacated four school and should vacate three more.

3. The pupils get better schools, the expense is less, good attendance, no tardiness, and better teachers in the schools. The pupils take more interest in study, dress, neatness, in short conclude school is business.

4. At first seriously object, but afterwards favor it. It is an idea that is growing. It can be better favored where there are good roads. We have not attempted it on dirt roads.

5. From one and one-half to four miles. The nearest district house to Carmel graded school is three miles away. The parents do their own transporting in most cases.

6. The Trustees of townships where there are stables pay liverymen for caring for pupils' horses. In townships not so favored the Trustees build stables. At No. 1, White River Township, S. D. Basey has the whole school transported for \$1 per day. At No. 2 in Clay Township J. W. Morrow transports for 50 cents a pupil, doing the driving.

7. To favor this plan, put the very best teachers in the center schools, give a music teacher, furnish every encouragement, and people go there of their own accord. The idea is well supported in Hamilton County.

HANCOCK COUNTY—

1. The sentiment of the present Trustees is decidedly in favor of above plan.

2. In Center Township; to a very limited extent in Jackson. The effects have been entirely satisfactory to all who comprehend the best interests of their children.

3. The advantages are numerous; among them, greater class interest, by reason of larger classes; promptness of attendance; general interest, by reason of better graded schools. There has been much financial saving, but I have no statistics which would enable me to give actual figures.

4. Most patrons who have tried it are satisfied. Some complain—would rather have their children wade the snow for a mile and a half than ride two and a half. These are the exceptions, however. Generally, I have found the patrons satisfied. The greatest difficulty is one of sentiment. Patrons do not like to abandon their home schools, however much time and circumstances may have depleted them.

5. Such pupils as have been transported in this county have been taken from two and one-half to three miles.

6. This I am unable, at present writing, to do.

7. I very much fear that consolidation is blocked for the present in this county. There is even a pressure being brought to bear to re-

establish some schools long since abandoned. I am combating this with all my might, but there is opposition to consolidation.

HENDRICKS COUNTY—

1. All my Trustees feel that small schools should be abandoned.
2. Middle, Liberty, Guilford, Eel River, all with good effect.
3. Betters the pupils' school privileges by placing them with teachers who have fewer grades to teach. For every school vacated, saves about \$2 per day. It has so far worked no disadvantage of which I know.
4. Patrons are well pleased, because the children are doing better.
5. Two and one-half to three and one-half miles.
6. At first neither patrons nor pupils like it. But after starting they do not wish the school reinstated. We have had no trouble, and in some districts the patrons talk and apply for abandonment and transportation.
7. We have, in the last six years, consolidated and abandoned about fifteen districts in the county, and prospects are for the abandonment of ten more this and next year.

HENRY COUNTY—

1. The sentiment is favorable to discontinuing the small schools so far as most of the Trustees are concerned.
2. Dudley Township, with good success. Harrison Township, with success not so good.
3. Advantages: (1) Can procure better teachers. (2) Longer term. (3) Longer period for recitation. (4) Classes better and more evenly graded. (5) Cheaper and better buildings.
- Disadvantages: (1) Pupils may have to wait for hack on bad days. (2) Where hack is not heated it is too cold. (3) Frequently too much crowded and might tend to cultivate habits unfavorable to etiquette. (4) It throws the good country boys in association with the uncouth, cigarette-smoking boys of the villages, since the graded school is in the village usually.
4. Dudley Township, the patrons like it fairly well. Harrison Township, not very well, owing partly, I think, to the prejudice occasioned by opposing it in the start.
5. As far as four miles.
6. In Harrison Township the patrons wanted a schoolhouse built in the district. The Trustee thought there were not enough scholars to justify it, and refused. He transported the pupils. The pupils and patrons decided to oppose it and have done so. They call the hack the "ice wagon," although it is well inclosed. Other districts, fearing a Trustee might do them likewise, made it a Trustee election issue and won.
7. I am not in favor of transporting good country schools where they are large enough to keep up a good interest; but am decidedly in favor of transporting small schools or schools in settlements where the patrons do not work in harmony with the schools. It seems a good thing where it can be done by the consent of the patrons, but not so good otherwise.

HOWARD COUNTY—

1. Nothing of the kind has been done yet, but I think it will be tried in some townships next year. Some Trustees and members of Advisory Boards think it is the proper thing to do. I am encouraging the movement all I can, for I have found many schools too small for good work. I really believe that better work is done in the overcrowded school than in the schools with a small enrollment.

2, 3, 4, 5, 6 and 7. No answer.

HUNTINGTON COUNTY—

1. Very favorable.

2. (a) In Lancaster and Polk townships. (b) A strong sentiment against it by the patrons before being tried; but almost universal satisfaction at close of the school term.

3. (a) Regularity of attendance, no tardiness, no playing "hooky," less or no complaint about conduct of pupils in going and returning from school, less liability to colds, therefore better health; and, hence, a much better school. Longer term of school.

(b) Complaint of patrons about destroying the sacred "little red schoolhouse." No real disadvantage.

(c) In one case, instead of paying the teacher \$2 per day and other necessary expenses, pupils conveyed for 89 cents per day. In the other case a saving of a little over a dollar per day, besides the necessary expenses of fuel and so forth.

4. Universally favorable in Polk Township. In Lancaster Township a few oppose it, but on no legitimate grounds.

5. In Lancaster Township three miles. In Polk Township about four miles.

6. At the time of taking the enumeration the Trustees secured the consent of the majority of the patrons, and then let the contract of conveying the pupils to the lowest responsible bidder soon, and made other minor necessary arrangements. In both cases Trustee bought hacks. The drivers at first found some trouble in discipline until the teacher and Trustee gave the pupils to understand positively that the driver had the necessary power delegated to him by the teacher and Trustee. No trouble afterwards.

7. Both the Trustees (L. L. Ulrich, of Lancaster Township, address River, Ind., and John M. Rodgers, of Polk Township, address Monument City, Ind.) and myself gratified with the results.

JACKSON COUNTY—

1. The Trustees of this county favor it as far as practicable. In some townships the roads will not permit of it.

2. In Carr Township. It was a success. At first the patrons objected, but after it was tried they seemed to be satisfied.

3. An advantage in the case tried was not only a financial one but a great advantage to the pupils. It placed them in a good graded school, one in which there was an interest manifested in the class, also on the play grounds, gave them longer time for recitation, etc. Financially a saving of 75 cents per day.

4. The most of them favor the plan. Some oppose, to be on the contrary side.

5. About three miles.

6. In Carr Township there is a school about three miles from Medora, a grade school. This school enrolled about twelve pupils. The Trustee hired a man to convey them for 75 cents per day. He went out at a certain time and they were on the road when he arrived. The pupils were never tardy and were regular in attendance.

7. No answer.

JASPER COUNTY—

1. Decidedly in favor of discontinuing small schools. Under favorable circumstances in favor of consolidation.

2. Walker. We had a school of about eight pupils. It cost us about \$90 to have these taken to another school. We saved over \$200. The pupils were better instructed and we were well pleased with the result.

3. It increases the length of school term. We can pay more and thereby secure better teachers. It aids in the supervision of the County Superintendent. Pupils were better taught. We saved about \$200 in one school last year. (Teacher 130 days at \$2 per day, \$260. Fuel, \$40. Total expense, \$300. Cost of transporting, \$90. Saved, \$210.)

4. Objected at first, but were well pleased later. I think, however, that patrons as a rule are very largely opposed to the idea of consolidation.

5. Two miles.

6. We had a school of about eight pupils. They lived about two miles from another school. We had been having a very poor school here, and decided that it would be best to take them to the other school. The year before our school cost us about \$300. We took these pupils to the other school for \$90, and gave them a much better school.

7. The great barrier in our way of consolidation is "bad roads."

JAY COUNTY—

1. There isn't much sentiment in favor of the plan, except in the case of very small schools. There has been but one school abandoned in Jay County in the past three years. That one was in Richland Township. Former pupils of that school are now sent to adjacent schools in the same township or are transferred to Dunkirk.

2. There has been but one attempt at transportation. That was in Penn Township, Granville Phillips, Trustee. He had planned to discontinue two of his smallest schools and transport the pupils to Pennville, but when school was about to open such strong opposition was manifested by the patrons that he thought best not to attempt it.

3, 4, 5, 6 and 7. No answer.

JEFFERSON COUNTY—

1. The question of abandoning the small schools and consolidating the schools in the various townships of this (Jefferson) county has been

discussed at the meetings of the Board of Education for the past few years, but thus far no definite action has been taken. They are fully alive to the merits of the plan, but are not ready to pronounce it feasible on account of many of the township roads being almost impassable during certain periods every year.

2. It has not as yet been tried.

3, 4, 5 and 6. No answer.

7. Several small schools have been abandoned in this county during the past three years, resulting in quite a material saving financially and in strengthening the other schools without working any great hardships on the pupils in the districts temporarily abandoned. The roads are becoming much better year by year, but at present the plan of consolidating the weaker, or all of the schools of the townships, is almost impracticable.

JENNINGS COUNTY—

1. Except in one township (Spencer) there has not been any sentiment on part of trustees. In township named, with twenty miles of new pike road, the trustee has abandoned three country schools, and children attend the Central Township school at Hayden. There are other country schools yet in township, but I do not think they will be abandoned.

2. In none.

3, 4, 5 and 6. No answer.

7. I have been working on trustees and patrons along the line of consolidation in some localities but as yet we have not been able to overcome the prejudices against the idea. I believe, however, with better roads, we are soon to be able to abandon quite a number of small schools.

KNOX COUNTY—

1. The trustees, as a rule, think favorably of the plan and have discussed it freely. The conditions in this county are unfavorable to carrying into effect this plan. We have no good roads in this county at present, but elections have been held in two townships this month and good roads were voted. For the past three months the roads have been impassable.

2, 3, 4, 5, 6 and 7. No answer.

LAGRANGE COUNTY—

1. They are in favor of consolidation so far as the size of the school will permit economy, and the topography of the country does not interfere. The probabilities in this county are for limited consolidation.

2. Springfield, Bloomfield, Johnson, Clay, VanBuren. The parties transported are generally well pleased. All complaints come from unsatisfactory conveyances.

3. I do not have the figures, but trustees are largely figuring on whether they can heat, repair the house, and pay teachers so cheaply as to secure transportation elsewhere with its teaching. Half of the

transportation is to neighboring district schools. The cost is about two-thirds of the old rate for a small school.

4. The graded schools in most cases are not sufficiently well equipped to make their superiority apparent to all. The parents, as well as pupils, like increased numbers and better organization, but resident taxpayers generally work against the abandonment of a school.

5. From one and one-half miles on the route to the extent of said route, about four miles or more from the schoolhouse.

6. Transportation in this county is in its infancy, as fully half of the transporting was begun this year. They add one school at a time generally but the additions remain, although the process is not very rapid. Johnson doubled the number of wagons to two schools in 1899-1900. Same of Bloomfield. Van Buren, began, and so did Clay.

7. It seems that consolidation will gain ground somewhat in proportion to the number of new houses demanding reconstruction, as few or no new structures will be placed near graded schools already established.

LAKE COUNTY—

1. They think good roads must be secured first. The people are against it, and the trustees do not care to antagonize them too much.

2. Hobart Township. This was only for high school pupils and sixteen were transported four miles with fair satisfaction.

3. Have never tried it in country schools.

4, 5, 6 and 7. No answer.

LAPORTE COUNTY—

1. The matter of consolidation of schools has received much attention in this county within the last three years, and trustees are, so far as I am able to learn, unanimously in favor of abandoning small schools and transporting pupils at public expense to village schools or other schools in the townships.

A resolution by the County Board favoring the abandonment of all the schools with an enrollment of less than nine pupils was spread upon the record of March 6, 1899.

2. (a) Galena, Kankakee, Center, Johnson, Noble, and Hanna Townships. (b) Has given general satisfaction to patrons and school officers and made a saving to the townships of over half.

3. I would consider the following advantages: (a) Much cheaper, saving in heat, school apparatus and repairs of buildings in case schools had been opened in the abandoned districts. The saving must be greater in case several schools are abandoned in the same township. (b) Attendance has been increased and cases of tardiness reduced. (c) Pupils' health has not been impaired by wet feet, etc., and better sanitary conditions have been possible in the school. (d) I believe better roads will follow. (e) It will give a longer term of school under better conditions. (f) Closer and more efficient supervision. (g) It will give a graded instead of an ungraded school where each pupil will have the advantage of personal contact with his instructor and the interest and emulation accruing from larger classes instead of

being a member of one of eight divisions under the same teacher and as in many cases, the only member of his class in the school. (h) It will give each teacher an opportunity to specialize in her particular grade; give her a chance to select the work which she best likes and is most efficient in. (i) Make a united whole of township schools and bring them more nearly on a standard with city schools.

I would consider long distance, in some cases, and bad roads in some localities, as disadvantages.

In no case have all the schools of a township been consolidated in this county. Transportation for the small schools has cost from \$75 to \$160. The cost of maintaining the abandoned schools would have cost—teacher, \$320; fuel, \$25; apparatus and repairs, \$35—total, \$380.

4. Patrons as a rule remonstrated against the plan at first, but in no cases have substantial complaints been made. After the plan is once in operation, and patrons see its advantages, they show a disposition to advance the cause.

5. Pupils have not been transported more than three miles in this county at any time.

6. Worden school, in Noble Township, was closed last fall and a team hired to transport pupils a distance of about three miles for one dollar per day. The wagon used was to be covered and to run on scheduled time. Patrons were generally pleased until a boy, or young man, was hired as driver. Young man proved incompetent and a man was employed. In this particular case had the driver been competent from the first and the wagon been better equipped, the plan would have been highly successful. All is running smoothly at this time, and more schools in the same township will probably be closed in the near future.

7. I think we can safely say that consolidation is the order with our trustees, and small schools will continue to be abolished as rapidly as it is possible for us to do so. We aim to make the change gradually at first.

LAWRENCE COUNTY—

1. They generally oppose it, but it is because the patrons object to it.

2. Not tried.

3, 4, 5 and 6. No answer.

7. There are many places in this county where schools could be consolidated and the schools would be made better and money would be saved.

MADISON COUNTY—

1. The old trustees (now in office) are in favor of it; but they are afraid to attempt anything now, as we have so many good single rooms.

2. They transport about twelve from Rigdon to two miles into Boone. The result was not the best because it crowded the school where they went. It would have been better perhaps to transfer and send them to Grant County.

3. No answer.

4. Don't like it.
5. Two miles.
6. No answer.
7. It has not been sufficiently tested in this county to reach any conclusions in the matter.

MARION COUNTY—

1. The sentiment among trustees is strongly in favor of abandoning the small schools. In some instances trustees have attempted the same, but have met with opposition from parents.

2. Transportation (limited scale) in Washington and Decatur townships. In the first instance, the patrons much pleased; in the second, township patrons dissatisfied and demanded the re-establishment of the school.

I am of the opinion, however, that this dissatisfaction arises from the desire to have a certain teacher obtain a school, regardless of advantages.

3. Advantages: Closer grading; broadening of pupils from association; less exposure in bad weather. Disadvantages: I have observed none.

I can not give figures, as a portion of this was barter between trustee and parent.

4. See statement No. 2.
5. Greatest distance, three miles.
6. Too irregular to give incident.
7. We have had no regular work in transporting pupils; in one case trustee transported a part of the year, and parents a portion of the year. In some instances parents transported their own children, and those of one or two other families. The work in this line here is irregular. We meet with much opposition from the older inhabitants; the younger element favor the idea.

MARSHALL COUNTY—

1. Favorable.
2. We have not transported pupils, but have abandoned a few small schools where the pupils would not have to walk more than two miles to reach another school.
3. Makes weak schools strong and is less expensive. Cannot give figures.
4. Educated people can see the benefit of the combination, thus giving better instruction.
- 5 and 6. No answer.
7. We do not transport any pupils, but I think if we can get our patrons to see the advantage of closing the smaller schools and uniting them with the larger ones, we will get the advantage of graded work at a less expense.

MARTIN COUNTY—

1. In the affirmative. Public sentiment is growing in favor of it.
2. Not one.
3. Our disadvantages would be bad roads and number of streams that cut up the county.

4, 5 and 6. No answer.

7. The physical geography of Martin County would make it impossible to carry the concentration as far as in a more level county. We shall have to have more schoolhouses than a more level one, as a matter of course.

MIAMI COUNTY—

1. Trustees are in favor of consolidating schools and are doing so as far as practicable.

2. None.

3. Better schoolhouses.

4. Favorable.

5, 6 and 7. No answer.

NEWTON COUNTY—

1. In a few townships the trustees favor consolidating schools, but in most townships the roads are too bad during the winter months.

2. In McClellan and Lake. Lake has not tried it extensively, and trustee says but little for or against it, but I think it will be quite popular in the near future. Trustee Elmer Skinner, of McClellan, says: "Increased attendance, little or no tardiness, better work, better teachers at advanced wages, longer school term, better libraries, better supervision."

3. Schools were consolidated from six to three. Mr. S. pays liberal salaries, pays special music teacher, etc., and finds a net saving of \$708 per year.

4. Mr. S. states: "First, only objections, dislike to send pupils so far from home; second, local jealousy and a natural dislike to getting out of the old ruts. The patrons, with few exceptions, are at present pleased with the change."

5. All pupils outside of a two-mile limit.

6 and 7. No answer.

NOBLE COUNTY—

1. Our trustees are now discussing the subject. Some favor and some oppose it.

2. In Orange Township with excellent and satisfactory effects.

3. Advantages: Better schools, larger classes in certain grades, better grading, gives teachers a better chance inasmuch as they do not have so many grades to the room, and, in fact, I approve of it in every way where roads permit of the consolidation.

In some parts of our county the roads are bad during a portion of the year. I can not give figures of saving, but the trustee of Orange Township, W. W. Williams, can.

4. I believe the patrons are delighted after having tried it. Of course there was some grumbling and "kicking" at first.

5. I think four miles is the farthest.

6. Mr. Williams will be able to do this far more intelligently than I can.

7. No answer.

OHIO COUNTY—

1. They are very much in favor of abandoning small schools and consolidating when it is practical.
2. In Randolph Township, and has been satisfactory.
3. Better school, and saving of about \$150 in the one case where we have transported pupils.
4. Some favor and some oppose it.
5. Two and one-half miles.
6. Have only had one, from which I have given the preceding.
7. No answer.

ORANGE COUNTY—

1. In townships where the roads are graveled and country is fairly level, it is favorably considered by the trustees, and I believe will be tried before long.
2. None as yet.
- 3, 4, 5 and 6. No answer.
7. One township in Orange County is ripe for the experiment, and I think there would be nothing in the way of successfully putting the plan into operation in this township in the near future. The people have been talking it, and some of the country schools adjacent to Orleans are almost deserted, as the children are going two and three miles to town, by reason of good roads and superior school advantages.

PERRY COUNTY—

1. Two trustees have made an effort to abandon small schools. Oil Township has abandoned three, and a fourth will be this year. Union will unite two this year. I am going to try to reduce the number in Clark. Other trustees are afraid of their popularity.
2. Have never tried it. Can not interest anyone in it.
3. We have a few localities where this plan is practicable.
4. Don't think.
5. Condition of our roads will make this impossible in most parts of Perry County.
6. No answer.
7. Tobin Township presents the best opportunity for a trial of transporting in this county.

PIKE COUNTY—

1. We have discussed the matter but little. There are a few trustees who will have to transport or build new houses. Our trustees are in favor of that measure that will make our schools better. Will discuss that subject at our next meeting, May 1.
2. None.
3. Don't know.
4. They know nothing about it.
- 5 and 6. None.
7. No answer.

PORTER COUNTY—

1. The sentiment is strong among trustees, but the people of the smaller districts object, and it is difficult to lead them to see the benefit.

2. In Union Township we are transporting one school and with good effect, but we had much trouble to start them. Now they do not desire to go to the old school.

3. No disadvantage whatever. To say nothing of the \$240 saved, the advantage of having the children in larger classes and having access to a better library and school apparatus can not be estimated.

4. As I stated under No. 2, the parents fought the movement at first. They furnished all kinds of objections, but found by trial that their objections were not well founded.

5. Two miles.

6. We had a school of nine. The parents objected on the grounds that if the school was closed they would never have a school again. They threatened to take it to the courts, but the school officials were willing to do so, and finally the parents submitted and are now well pleased.

7. I think as soon as we have the road problem settled we can save much money by having all our smaller schools transported.

POSEY COUNTY—

1. Generally, they are in favor of holding to the small schools. The idea is a new one and the township trustees of this county are afraid that such consolidation would be condemned by the school patrons of their townships. The subject has been much discussed at the County Teachers' Associations, and also at the Farmers' Institutes. The farmers of the county are of the opinion that the driver of an ambulance conveying children from one school district to another in the winter season, would probably find a Posey County mudhole that would block the entire scheme.

2. None.

3, 4, 5 and 6. No answer.

7. It is my opinion that the idea is a good one; but with the consolidation of schools must also come improved and better country roads. I am also of the opinion that the saving in the salary of teachers, improvement of schoolhouses, together with the better culture that would be afforded by consolidation, would be in a great measure sufficient to improve the roads. I am heartily in favor of the scheme, but am of the opinion that it will be many summers and winters before it can be realized in this county.

PUTNAM COUNTY—

1. A few trustees think it would be best to abandon a few schools, but feel that until the sentiment of the patrons favor such a course, no work in this line can be done.

The patrons soon learn the law when they are requested to agree to have their school discontinued and refuse to do so. They have refused transportation when offered them. Nothing can be done here until the law bearing on the subject is changed.

2. Has been refused in Clinton, Russell and Floyd.
- 3, 4, 5, 6 and 7. No answer.

RANDOLPH COUNTY—

1. No effort has been made in the direction indicated, which would imply that they are unfavorable to the plans.
2. In no townships worthy of noting.
- 3, 4, 5, 6 and 7. No answer.

RIPLEY COUNTY—

1. They are not favorable to it. In two different townships one school has been abandoned on account of average attendance being very small—only about six for the term.
2. It has not been tried.
- 3, 4, 5, 6 and 7. No answer.

RUSH COUNTY—

1. Favorable, but hesitating to breast the opinion of some people called the "public." A few can make a great noise..
2. Jackson Township tried this during the school year '98-'99.
 - (a) The roads were so bad in the locality in which it was tried that it was almost impossible for the driver to carry out his contract, so it was continued about two months.
 - (b) The children transported at public expense belonged exclusively to poor families, and a vigorous protest was made by heavier taxpayers.
3. (a) The pupils were always on time.
 - (b) The condition of the roads was a decided disadvantage.
 - (c) In this instance there was no saving of expense.
4. Those receiving the benefit were well pleased. The others were greatly opposed.
5. This experiment was made for two and one-fourth miles. It was a little town—Henderson—which was conveyed to an adjoining district.
6. In Washington Township the pupils transport themselves. Some twenty years ago the trustee, W. S. Hall (he is the original promoter of concentration of schools in Indiana), rearranged the schoolhouses, making the number five instead of eight, and started a graded school. The township is six miles square, so that some pupils must drive four miles to reach the graded school. He was bitterly opposed by a majority of his people, but, by his tireless energy and determination, arranged the township so that money has been saved to the people and they can maintain seven months of school with a low levy. The diagram at the close of this section will show the location of the schoolhouses. The truant officer has little to do in this township, as there is a splendid school sentiment. Some patrons are now sending their children past other schools to get them into the graded school of three rooms and two years of high school. All eighth-year pupils, except two in the township, have attended the graded school during the past year, thus relieving the country teacher of some work.
7. No answer.

SCOTT COUNTY—

1. The sentiment is strongly in favor of abandoning small schools and making the districts larger, but is not much in favor of the one schoolhouse idea.

2. Transportation has not been tried.

3, 4, 5 and 6. No answer.

7. I do not think the time has yet come in this county for the abandonment of district schools in general, and believe that any attempt at general consolidation will be viewed with suspicion by the people.

SHELBY COUNTY—

1. I have brought the matter before my trustees several times and they consider the matter very favorably.

In view of the new township law, however, they are very doubtful whether it can now be done very easily.

2. It has been tried in Hanover Township, Shelby County. It was very satisfactory to the patrons after it had been instituted, but it received their hearty disapproval at the time the trustee had the move under consideration.

3. By this system the pupils were enabled to secure the graded work; they were in classes that were larger, thus securing a better class enthusiasm; it brought the country pupils in close touch with the high school pupils, creating in the country pupils a desire for high school work.

I do not remember the exact saving, but the cost, per pupil, in the transferred school was decreased about one-half.

4. As I understand it, the patrons like the plan very much. The trustee of this township intended to consolidate all the schools of his township this year, but he had an advisory board not in sympathy with his plans, hence he let the matter drop.

5. In this case the pupils were transported about four miles, I think.

6. During the last school year William Patterson, trustee of Hanover township, decided to transfer the school just north of Morristown to the town of Morristown. He secured a closed back for the purpose, secured a hackman for the sum of one dollar per day and gave the plan a trial. Mr. Patterson will be glad to correspond with any one that has a move like this under consideration. As I have said, however, the arrangement was entirely satisfactory in every particular.

7. This plan demonstrates that there are a large number of schools being conducted at an expense out of all proportion to the cost of maintaining other schools that, from the large number accommodated, are far more successful schools; that it gives to the children of the remote districts an opportunity of attending the graded schools, thereby having an opportunity for more extended work than in the districts that work under more competent instructors. The plan recommends itself to every school man, but I am sorry to say, it does not at first appeal to the mass of school patrons.

SPENCER COUNTY—

1. There is a tendency here to abandon small schools. I think all the trustees would encourage consolidation enough to have all the buildings of at least two rooms.
2. The townships have not transported any.
- 3, 4 and 5. No answer.
6. At one place, Lake, some pupils go several miles, using their own means of transportation, and all interested parties see it is the best thing to do at present.
7. No answer.

ST. JOSEPH COUNTY—

1. With regard to the report for transportation of children, will say that it has not been tried here enough to tell how it would work. One township is transporting some pupils to prevent transfers, and so far it works very well. The cost is a little less than to transfer, and it makes what was a small school, large enough to make a good school. I think that more of this will be done each year and some small schools may be closed by this means next year.
- 2, 3, 4, 5, 6 and 7. No answer.

STEBEN COUNTY—

1. This has been done but little in our county. At present we have but two abandoned schools. The pupils belonging to these districts were accommodated without transportation. When the attendance is but four or five pupils the trustees generally abandon the school.
2. Transportation has been tried once in the county, in Jackson Township. Schoolhouse burned, and trustee transported pupils to his township graded high school. Attendance was fairly good, but not as good as in the home district.
3. In the one case the saving was about one-half. Do not know exact figures. The trustee did not have any extra expense except the transportation. He did not add to his teaching force in the high school.
4. The patrons who sent children accepted the situation but preferred the school nearer home, so the trustee built new house.
5. About four miles was the farthest in the case mentioned. No transportation has been done for over a year.
6. I believe I have given enough data so that you may know the general nature of the experiment. I have given all I know.
7. No answer.

SULLIVAN COUNTY—

1. We are trying to disband the small schools where the pupils can be accommodated at some other place. In the last two years we have abandoned two. I think we will abandon two more the coming year.
2. None.
- 3, 4, 5 and 6. No answer.
7. I have been trying especially to get country schools discontinued where the school is located near some town. Our roads are

just beginning to get in shape to think about transportation of pupils. We have had no gravel roads until the last three years. We have more single schools than we need if we can once get them properly located.

SWITZERLAND COUNTY—

1. All school officials of this county know that the plan would not only be universally unpopular, but also appreciate the fact that to consolidate the schools by township with the view of transportation of pupils would not be practicable, but absolutely impossible, because of the rough and uneven surface of the country, the irregular and imperfectly laid out system of roads, and in the winter time the absolutely impassable condition of the roads.

2, 3, 4 and 5. No answer.

6. The experiment has not been tried but the experience of the superintendent in visiting schools this winter is conclusive evidence to his mind that the plan would be a complete failure.

Personally the county superintendent favors the plan in such counties where the roads and the other conditions would make the plan practicable or even possible.

7. No answer.

TIPPECANOE COUNTY—

1. The trustees in this county are agreed that something should be done as indicated above, but I think it will be difficult to accomplish much this year for political reasons. We have about twenty-five schools, the enrollment of which is less than fifteen.

2. It has not been tried in this county. I am trying to get this started in four townships for next year. It would be a mistake and defeat the project here if we were to try to make this general throughout the county. If we can start it in a few places and show that it can be accomplished and carried on successfully, then we can make it general. County especially well situated for consolidating schools. High schools in every township and good gravel roads.

3. No answer.

4. Has not been tried.

5 and 6. No answer.

7. If there were some law to warrant trustees to close schoolhouses, much could be done. But as long as trustee has to obtain consent of patrons he can not accomplish very much. A law to this effect would work well here: The County Superintendent, the country truant officer, and the trustee in his respective township to constitute a commission with power to close schoolhouses and school distance be four miles when conveyance is provided.

TIPTON COUNTY—

1. All the trustees are in favor of abandoning small schools and placing the children in the graded schools wherever it can be done.

2. In Jefferson Township this plan has been in operation for the past three years.

One school of about ten pupils was abandoned, a hack used for transportation of pupils to the Kempton graded schools. In Wildcat

Township no transportation has been done, or schools abandoned by the trustee, but a great many eighth-year pupils in a radius of four to five miles have been driving in buggies in order to get the better advantages offered in the Windfall schools.

3. One of the greatest advantages in the cases above named is, they receive superior instruction; another, they are given more attention. From a financial standpoint, it is a great saving to the township. The year just closing Jefferson Township had 120 days of school:

Teachers' salary at \$2 per day	\$240
Cost of fuel.....	22
Repairs, etc.....	10
<hr/>	
Total.....	\$272
Cost of transportation.....	100
<hr/>	
Saving in one year.....	\$172

4. Where it has been tried, patrons are in favor of the plan.

5. Four miles one way.

6. Three years ago Mr. A. H. Hinkle, trustee of Jefferson Township, Tipton County, was confronted with the problem either to build a new school building or transport the pupils to the Kempton schools, a distance of four miles. He chose the latter plan, although meeting with some opposition from the patrons. The plan has been in operation for three years, and the patrons are now favorably impressed with it, having seen the better advantages their children are receiving in the graded schools, as well as the financial saving of about \$175 each year to the township.

7. Attempts will be made in other townships next year to consolidate some of the smaller schools, and, unless we meet with too much opposition, there will be two schools abandoned in Cicero Township, two in Jefferson, and one in Liberty.

VANDERBURGH COUNTY—

1. Generally speaking, our trustees believe in the abandonment of small schools.

2. Transportation has been tried in Knight Township, two colored schools having been consolidated, one school being abandoned. The conditions in this case were peculiarly favorable to the scheme, all the children living almost in one house, the distance of transportation being about three miles, and the roads good. Naturally it has been a success.

3. There could be but one advantage in this case and that a financial one. It saved Knight Township one teacher's salary minus cost of transportation.

Previous salary paid to teacher of abandoned school for month...\$40
Coal, brooms, etc., per month, probably..... 2

Total.....	\$42
Cost of transportation per month.....	15

Amount saved to township per month.....\$27

4. Patrons approve of plan.
5. Transport pupils about three miles.
6. No answer.
7. Plan demands good roads and good vehicles; stoves needed for winter. Outside of inconveniences, such as getting children ready for school very early, bad roads, etc., the plan of course secures, as a result, all the advantages and disadvantages of the graded school system and loses all the advantages and disadvantages of the district system.

VERMILLION COUNTY—

1. One township trustee is trying to do this. All agree that it should be done.
2. One township, Helt, has offered this in one instance, but the patrons would not accept.
- 3, 4, 5 and 6. No answer.
7. The patrons of a small, old school cling tenaciously to that school apparently for what it has been. They object to transportation for various reasons, such as "too cold," "too crowded," "danger of runaways," "too far," etc. Prejudice and selfishness would probably cover ground of objections.

VIGO COUNTY—

1. The trustees favor consolidation, but have been slow to act because the roads have been so poor that it has been thought to be impracticable at present. An extensive system of gravel roads is now in course of construction, which, when completed, will remove the difficulty of transportation.
2. In Otter Creek Township. Failure.
3. No answer.
4. Patrons were opposed to the plan.
5. No answer.
6. The trustee of Otter Creek Township attempted to abandon a school whose enumeration was about thirty. The patrons of the school employed attorneys to bring action against the trustee. Before the suit was filed, the trustee re-established the school.
7. No answer.

WABASH COUNTY—

1. The sentiment among trustees is a great deal stronger than it is among the patrons. I do not mean the making of just one school for the township, but the throwing together of two or three district schools.
2. We have not tried transportation except the transporting of a few pupils who happened to live more than two miles from any school.
- 3, 4, 5 and 6. No answer.
7. Personally, I am very much in favor of throwing as many small schools into one as possible. We have fairly good pikes and I am inclined to the belief that consolidation would be possible in parts of our county and better results could be had for the amount of money expended.

WARREN COUNTY—

1. On account of bad roads, the majority of the trustees and people do not favor the plan.
2. No answer.
3. We have not tried the system as yet.
- 4, 5, 6 and 7. No answer.

WARRICK COUNTY—

1. Our trustees will not talk of such a thing, much less can I get them to try it. Our roads are about twenty feet wide and two feet deep during most of the winter, and it is next to an impossible thing to get children to school a distance of one mile during a part of the year. It has not been tried in any of our townships, and from present outlook it will not be tried for a number of years, or until the law compels it. People are wanting schoolhouses on every 160 acres of land.

- 2, 3, 4, 5, 6 and 7. No answer.

WAYNE COUNTY—

1. Abandon whenever possible and consolidate. In the past ten years we have abandoned twenty-seven schools. We expect to abandon three more this year.

2. Boston, Clay, Franklin, Green, Jefferson, New Garden, Perry, and Webster. Very satisfactory results.

3. Advantages: Either graded work or longer school. We have one school abandoned—the pupils were divided—a part of whom were within two miles of another school; the remainder we haul to another school at a total cost of \$20—saving \$330. Our hacks cost from \$85 to \$120 in the other cases. Counting advantages of graded school work we save at least \$3,000 a year.

4. At least 95 per cent. of patrons would not go back to the old plan.

5. From two to four miles.

6. When the Ballenger school, Green Township, was abandoned, the patrons protested in strongest terms, threatened litigation, etc. The year following one among the first questions asked the trustee when taking the enumeration, "What are you going to do with our children this year?" The trustee wisely asked: "What is your wish?" The answer: "Give us the hack and graded work; we were mistaken last year."

7. "Consolidation" is the only solution of strengthening our schools and reducing the cost, at the same time furnishing better teachers at better salary. (See plan of Webster Township, page 583.)

WELLS COUNTY—

1. The trustees of Wells County are conservative on this question. There has been but one school abandoned and those pupils are hauled to a township graded school. The principal of that school joins me in making this report.

2. Chester has abandoned one school and pupils are transported to graded school. Other districts desire transportation to this school.

3. This is the third consecutive year pupils have been transported from District No. 8, Chester Township, to the Keystone Township graded school. The advantages are more numerous than the disadvantages.

Advantages: (1) Pupils are never tardy. (2) Attendance is better. (3) Pupils reach school building with dry clothes and are not tired. (4) Better teachers. (5) More time for recitation. (6) More pupils in class, hence better discussions in recitation. (7) The expense is cut down at least one-third. (8) Better discipline.

Disadvantages: (1) Pupils living near their proper district are compelled to prepare for school earlier. (The advantages are so great we seem inclined to omit any disadvantages). (2) Bad roads.

4. The patrons are highly pleased with the plan as long as the driver of the transportation wagon is qualified and good order is kept along the road. The pupils should be held responsible for their conduct by the principal of school. The patrons will be satisfied as long as transportation is conducted properly, just as they would be satisfied with the proper teacher at their home district. Patrons are not satisfied with a disorderly school; neither are they satisfied with an unsystematic carry-all system.

5. In district No. 8, Chester Township, we make a trip of eight miles morning and evening, or sixteen miles per day. It takes about one hour and fifteen minutes to make the trip.

6. September 19, 1898, District No. 8, Chester Township, Wells County, Ind., was transported for the first time to Keystone Township graded school. At first it was a novelty to pupils, patrons, and school officers. The children were not orderly, probably due to lack of government in their former district school. The order gradually grew better, but the climax was not reached until two pupils were punished by principal of school for misconduct. Since that time everything moves off nicely and pupils do not care to return to the district school.

7. No answer.

WHITE COUNTY—

1. First class.

2. Jackson, Liberty, Union and Big Creek.

The "transportation" of Jackson Township was fairly satisfactory to all—will try it again this year on additional schools. One school in Liberty Township has been transported four consecutive years and will be continued. Union Township transported one school last year and will transport three this year. Big Creek, good.

3. (a) Better classification, more time for recitation, breaks up feuds, and physically better for pupils; also better teacher.

The only disadvantages are: Residence far apart and muddy roads on the prairie. The savings per school are: Jackson, \$150; Liberty, \$180; Union, \$165; Big Creek, \$220.

4. At first they object, but one year will win over four-fifths of them. Our first effort in Jackson Township met with stout resistance, but last year the objectors asked to have the school transported the next year.

5. Varying from three to five miles.

6. Our first effort was made in Liberty Township, 1896-7. The house in District No. 7 was unfit for use; the trustee had no funds to rebuild that fall and the only way out was to take the pupils to a two-room school in Buffalo. When the trustee took the enumeration in 1897, the patrons insisted on being transported again the next year, and the next, etc. In my opinion, there will never be another school taught at No. 7.

7. In addition to the townships mentioned in No. 2 (each of which will transport from one to three new schools next year), Prairie Township will transport four schools to Brookston next year; Princeton Township, two to Wolcott, and I think others will join the procession later in the year.

Centralization by means of transportation gives the country folk an equal chance and advantages with the towns and costs less in taxes. The system deserves to be worked hard and live always.

Common wagons and open carriages should not be used to transport pupils. Children have fallen out of these open rigs and received severe injuries.

The common "fair ground hack" is more convenient, bars accidents and protects the pupils from sun and storms.

WHITLEY COUNTY—

1. The sentiment of abandoning small schools, especially where they are located less than two miles apart, prevails.

2. In Union and Etna townships the results are satisfactory. School work is more interesting.

3. Advantages: A larger school with its consequent inspiration to both teacher and pupils. It is economical. Last year teacher in one school that is now abandoned received:

\$36 per month for 7 months.....	\$252
Additional expenses—wood, supplies, etc.....	40
Total.....	\$292
Cost of transportation, 140 days.....	140
Financial saving.....	\$152

This is a fair example in Whitley County. The saving in finance is usually added to the salary of the other teachers, giving the trustee an advantage in securing good service.

4. Patrons at first are not enthusiastic. It is not a popular move to take the schoolhouse out of a man's dooryard. However, whenever it has been judiciously tried it has proven satisfactory. In one school the trustee provided transportation the first year; the second year people were so well pleased that they furnished their own transportation. We are particularly careful to secure a good teacher in the school to which transportation is made.

5. From two to three and one-half miles.

6. See No. 4.

7. We have abandoned three schools in Whitley County, and expect to abandon four more next fall. No attempt is made to consolidate all the schools of a township at the center.

2. WHAT OTHER STATES ARE DOING IN MATTERS OF CONSOLIDATION AND TRANSPORTATION.

The following is taken from the report of Hon. G. T. Fletcher, agent of the Massachusetts Board of Education, and gives in detail the status of the work in that State:

DISTRICT SCHOOLS FIFTY YEARS AGO.

The question of the consolidation of schools has for many years received the attention of educators. Conditions pertaining to changes in the population and the wealth of communities as well as the increasing educational demands of the times have rendered necessary a certain centralization of forces for economy and efficiency in school work. Fifty years ago a large percentage of the people of Massachusetts belonged to the "original stock," and lived in country towns. District schools were numerous and large. Seldom did a school register less than twenty-five pupils; not infrequently seventy-five were enrolled during the winter term, ranging in age from four years to twenty-one. An attendance of forty or fifty pupils was a common occurrence. Many of the schools were taught in winter by college students—often the brightest young men from the rural communities, whose example was a stimulus to the boys of the district to get an education. In the summer, the teacher was often a young woman from the country academy, whose scholarship and character were an inspiration to the children. The district school was a center of interest and influence in the rural community. The range of studies was narrow, but the few branches then taught are regarded to-day as fundamental in a broader system of education. The independent thinking and the individual doing of pupils, whose age gave maturity to mind, were educating. The school was a "consolidation" of numbers and ability sufficient for the educational needs of the times. Similar conditions exist in a few country towns now, and such schools may well be nurtured by town and State in the place of their native growth. A home life of frugality, simplicity and industry is a potent factor in the upbuilding of body and mind. But there were many poor schools then, as there are now.

CHANGES THAT HAVE COME TO THE DISTRICT SCHOOLS.

Within the last fifty years great changes have been wrought in social life and conditions. The increase of population and wealth in centers of commerce and manufacturing is both a cause and a result of an exodus of the farming population to the cities and large towns.

In many rural communities farms were abandoned, or only the "old folks" left at home, to pass there the remnant of their days, while the farm constantly depreciated in value. The young, vigorous element of the population left home to work in store or factory. Families remaining

in the "hill towns," or coming to them, had few children; and, as a result, the schools became small, the local interest in them often decreasing in the same ratio. These changes came in different degrees of severity to different towns. Those most favorably situated for farming purposes "held their own," to quite an extent, in adult population and wealth; but the number of children constantly lessened, and the schools, though not generally reduced in number, were reduced greatly in attendance. Occasionally schools were united, to increase the number of pupils, or a winter term was held at the center of the town for the older pupils of all the districts. Just when and where consolidation on a small scale began we can not tell. The cause and the fact of a beginning are both evident. There came to the people, slowly at first, a realization that the interest, economy and efficiency that had in many cases characterized the large schools of former days were wanting. The struggle to retain the same number of schools as when the adult population was greater, the property valuation was twice as large and the town had three times as many children of school age, was as painfully evident then as it is now. The school had been the common center of interest, and the thought of its closing was a shock to the people. No wonder a deep-seated feeling existed, and still continues, that home interest and property valuation would suffer from the discontinuance of the local schools.

People are now coming to see that educational advantages are not represented by the number of near-by schoolhouses. From one of the annual reports of Dr. Harris, U. S. Commissioner of Education, we quote as follows:

"It has been frequently demonstrated and is generally conceded that it would be better both on economical and on pedagogical grounds to unite the many small and weak schools of a township, dispersed over a large extent of territory, into a few strong, well-equipped and well-conducted graded schools, located at convenient points."

MR. EATON'S STATEMENT.

The first general statement in print of the results of the law of 1869 was probably the pamphlet prepared by Superintendent of Schools W. L. Eaton, of Concord, in 1893, for the Massachusetts public school exhibit at the World's Columbian Exposition. As the combination of schools in Concord was probably more complete than in any other town in the State, the selection of Superintendent Eaton to prepare the pamphlet was highly appropriate. Mr. Eaton says, in part:

"At first the authority was used mainly to convey pupils to the high school. Within a few years, however, many communities have used this authority to increase the educational advantages of the children, constantly decreasing in numbers, who live in districts at a distance from the center of population. This has been accomplished by closing many district schools and transporting, at public expense, their pupils to the neighboring district schools or to the village."

Superintendent Eaton sent circulars of inquiry to 165 towns and cities, and received replies from 135. These replies indicated a gradually increasing number of schools as closed yearly. The reasons for closing says:

"In many of the towns of the State depopulation of the district outside of the villages has made it cheaper to transport to other schools than to teach them in situ. * * * In other towns the desire to make strong central schools, and the purpose to give all of the children of the town the benefit of better appliances, better teachers and better supervision have been the dominant motives to determine consolidation. * * * There is a substantial agreement in the affirmative that results have been satisfactory."

CONSOLIDATION AS SEEN BY THE STATE BOARD OF EDUCATION OF MASSACHUSETTS.

In the report of Agent G. A. Walton to the State Board of Education, in 1889, consolidation of schools is recommended. In more recent reports of the board many facts and opinions, based upon observation and upon information received by the secretary and agents, may be found. Some of the reasons advanced by them for the consolidation of schools and the conveyance of children may be briefly stated in abridged form, as follows:

Diminished school population, rendering the schools small and expensive, making it difficult to secure competent teachers for the wages that can be paid.

The cost in some small schools of five pupils was \$50 per pupil, while in schools of twenty-five pupils the cost was only \$10 per capita.

Two essential things must be kept in view—efficiency and economy. To secure these, there must be comfortable, convenient schoolhouses, necessary appliances, intelligent teaching, skilled supervision, and no more schools than are needed for the number of pupils.

In some towns two or more schools may be united, according to convenience of location. In others, most of the outlying schools can be accommodated at the center by transportation of pupils.

In a few towns of large area, bad roads and scattered population, little or no combination can be effected. In such cases the schools, small or large, must have such attention by the town, and, if necessary, such aid by the State, as will make them as good as possible.

One of the results that follow from consolidation is a better grading, a better classification of pupils, by placing them where they can work to the best advantage.

Consolidation gives a better opportunity for special instruction in music, drawing and nature study, and brings all the schools under closer oversight by the superintendent.

It insures better school buildings, appliances and teaching force.

The money saved in a small town by reducing the number of teachers is often large enough to furnish better school accommodations to the children, better wages to better teachers, such transportation as consolidation requires, and longer schooling.

OBJECTIONS TO CONSOLIDATION.

It must not be supposed that policies of consolidation are adopted without earnest discussion. In some cases the opposition has been so strong as to stave off favorable action for years. Among the reasons urged against consolidation the following may be cited:

Injury to the district, by removal of the school.

Risk to the health of children, because of long rides in cold and in stormy weather.

Association in carriages and during the long noon intermission at the schoolhouse.

Injury to health by cold dinners hastily eaten.

Long absence of young children from home.

It may be questioned whether the objection regarding injury to the property valuation of the district is a serious one. People having children to educate are not slow to see that educational advantages are not represented in their fulness and completeness by near schoolhouses. This property objection is well met in the replies to questions submitted to the towns, to which later reference will be made.

The objections to the risks of conveyance and of the noon intermission are of serious import, and can be met only by making transportation safe to health, manners and morals, as well as comfortable, and by requiring the presence of a teacher at the noon intermission.

PROGRESS OF CONSOLIDATION.

The progress of consolidation in Massachusetts through transportation for the last ten years is indicated by the tabulation of expenses, as given in the sixty-second report of the State Board of Education:

AGGREGATE COST OF CONVEYANCE FOR THE STATE.

YEAR.	Amount Expended.	YEAR.	Amount Expended.
1888-89	\$22,118 38	1893-94	\$63,617 68
1889-90	24,145 12	1894-95	76,608 29
1890-91	30,648 68	1895-96	91,136 11
1891-92	38 726 07	1896-97	105,317 13
1892-93	50,590 41	1897-98	123,032 41

FURTHER CONSOLIDATION NEEDED.

Now that the law extends the minimum length of the school year to thirty-two weeks, some small towns will be obliged to reduce the number of schools in order to pay their teachers sufficient wages to make them eligible to the payment of \$2 a week to teachers of exceptional excellence from the school fund, as provided by a recent law. Quite a number of these towns are now paying over \$5 a year on \$1,000 valuation for school

purposes, and they can hardly bear any heavier school expense. These towns and the State ought to co-operate to maintain good schools for all the children.

CONSOLIDATION OF SCHOOLS IN OTHER STATES.

A Maine law of 1897 says: "The superintendent of schools in each town shall procure the conveyance of all public school pupils residing in his town to and from the nearest suitable school, for the number of weeks for which schools are maintained in each year, when such pupils reside at such a distance from the said school as to render such consolidation necessary."

A law of New Hampshire provides that town school boards may use a portion of the school money, not exceeding twenty-five per cent., for the purpose of conveying children to and from schools.

A similar law existed in Vermont in 1894. A new law goes into effect in February of this year, whereby, "upon the application of ten taxpayers in any town, the school directors shall furnish transportation to any and all children residing one and a half miles or more from any school; but the aggregate cost of such conveyance shall not exceed twenty-five per cent. of all the school moneys." Vermont is now expending twice as much for transportation as ten years ago.

A provision of the school law of Connecticut authorizes town school boards to unite schools "when, in their judgment, the number of pupils is so small that the maintenance of a separate school is inexpedient," and provide transportation for the pupils.

The New York law of 1896 provides for a tax for conveyance of pupils by vote of the inhabitants.

A law of 1894 in New Jersey and one of 1897 in Nebraska provides for transportation of pupils.

From the report of the minister of public instruction for Victoria, in Australia, the following extract is taken: "Under the system of conveyance 241 schools have been closed. The saving in closed schools amounts to about £14,170 per annum. The attendance is so regular and the system so popular that applications are constantly made for its extension."

DISTANCES.

In Victoria the law provides that the following shall be deemed a reasonable excuse for non-attendance upon the public schools:

That there is no State school which the child can attend within a distance of two miles, measured according to the nearest road from the residence of such child; excepting when the child is more than nine years of age, then the distance shall be within two miles and a half from the residence of such child, measured as aforesaid; and when the child is more than twelve years of age, then the distance shall be within three miles from the residence of such child, measured as aforesaid.

Victoria has eight times the area of Massachusetts, but only half the population. Nearly half of this population is rural.

The Massachusetts legislature has never made any requirement about the limit of distance beyond which children should be conveyed to school at public expense except in a single instance. Chapter 541, Acts of 1898, provides that the town of Boxford may use the Barker Free School as a high school upon complying with certain conditions, one of which is that the town shall furnish free transportation to the school for pupils who live more than two miles away from it.

CIRCULARS OF INQUIRY.

To secure as complete information as possible regarding the history, progress, means and results of consolidation of schools and conveyance of children in Massachusetts, circulars containing inquiries regarding the different phases of the plan were sent to the school officials of all the cities and towns of the State. Nearly 200 replies have been received, representing conditions and practices in all sections of the commonwealth, from the largest cities to the smallest towns.

When their gist is contained in a few similar words or sentences, these replies are given only in percentages, or in a general way. Special facts, opinions and suggestions are quoted as fully as space will allow. As the circular calls for information upon more than twenty different phases of the subject, it is not possible, in the space allowed to this report, to name the towns responding. The returned circulars are on file at the office of the secretary of the State Board of Education in Boston.

The circular of inquiry began with the following letter:

Northampton, Mass., Dec. —, 1898.

To the Chairman of the School Committee or the Superintendent of Schools of ———:

Many inquiries come to the State Board of Education, not only from our own towns and cities but from those of other States, regarding the need, operation and results of plans for the consolidation of schools and the conveyance of children that naturally accompanies such plans. That such inquiries may be answered fully and intelligently, your co-operation is earnestly desired. Will you favor me, therefore, with such information about your own town's (city's) experience with consolidation and conveyance as is called for under the heads herewith given? Please forward your reply as soon as possible to

G. T. FLETCHER,

Agent of the State Board of Education.

The inquiries are given in full, as follows, the answers to each inquiry being given in immediate connection with it, and with various degrees of abridgment:

I. GENERAL CONDITIONS FAVORING OR REQUIRING CONSOLIDATION.

Changes in population, property valuation, etc., that have impaired the efficiency of your schools by reducing their size, increasing their cost, making it harder to get good teachers, etc.—

More than 50 per cent. of the towns report changes in population and property valuation in the towns as a whole, or in sections of them, that have affected the school conditions.

The following statements are samples of those coming from a large number of rural towns:

Attendance of pupils reduced; cost in a small school per pupil for a year, \$46.82; in the central building, \$16.30.

Difficult to retain good teachers.

Population diminished more than a half and property valuation more than a third since 1875.

Loss in population and property valuation makes it hard for us to meet increasing educational demands.

Good teachers command better wages than we can pay.

In one district that formerly had 60 to 80 pupils there are now 13. The farming population has disappeared.

Farming population once over 1,100; now only 605. Valuation reduced from \$375,000 to \$309,000.

Population reduced from 2,300 to 1,400 in thirty years; loss of \$70,000 in valuation in five years.

Farms abandoned; not enough children in any district to keep a school.

In many towns the loss in population and wealth is only in sections, usually in outlying districts, and so affects certain schools only. Many towns have gained in the villages as much as they have lost in the rural sections. Some towns and all of the cities have gained in population and wealth; yet most of them in some quarters have had to deal with diminishing schools.

II. WHAT THE TOWN HAS DONE TOWARDS CONSOLIDATING ITS SCHOOLS.

The number of schools that have been closed, whether the consolidation is partial or universal, whether it has gone on gradually or was brought about at one stroke, whether any children are sent to schools in adjoining towns or not, whether higher grades are taken to the high school building or not, etc.—

More than 65 per cent. of the towns and cities reporting have found it necessary or advantageous to close and consolidate some schools. Movements of population within town or city limits as well as the exodus of people from many towns have led to the closing of schools, but have not always involved the transportation of pupils.

Probably Quincy was the first town to act under the law of 1869, having closed two schools in 1874 and transported the children to other schools.

In the year 1893 Seymour Rockwell, the veteran school committee man of Montague, said:

"For eighteen years we have had the best attendance from the transported children; no more sickness among them, and no accidents. The children like the plan exceedingly. We have saved the town at last \$600 a year. All these children now attend a well-equipped schoolhouse at the center. The schools are graded; everybody is converted to the plan. We encountered all the opposition found anywhere, but we asserted our sensible and legal rights, and accomplished the work. I see no way of bringing the country schools up but to consolidate them, making them

worth seeing; then the people will be more likely to do their duty by visiting them."

This statement indicates that consolidation of schools was heroically completed in Montague in 1875.

Consolidation was begun in Concord in 1879:

Prior to that time and for many years afterwards there was a rapid diminution of school population in the outlying districts. Of late the school population of these districts has increased. We attribute this to the willingness of young married people to settle on these farms, since transportation secures to their children educational opportunities as good as the town provides. Consolidation begun as an experiment, was carried to completion, at the desire of the population affected.

From another town came this suggestive statement:

Once when a man wished to sell his farm he advertised, "A school near." Now he advertises, "Children conveyed to good schools." Farms sell more readily now.

Other towns report as follows:

We have closed only one school, and that for two terms during the year, as the lot will revert to the former donor unless a school is kept in the building.

The scattered population renders consolidation undesirable in our town.

Planned at one time to close a school, owing to smallness of numbers, and convey the pupils to the next village. After consideration, decided that only an unwise parsimony on the part of the town could favor the project, and it was abandoned forever.

A few years ago the town tried to "double up" the schools, and convey the pupils, but the people would not listen to the suggestion, mainly through ignorance.

Attempted to build a new schoolhouse and grade the schools, but bitter opposition upon the part of the older people defeated the plan.

We believe in closing the schools when it can be done.

Our rule is to keep a school as long as there are ten pupils in it.

From one to ten schools have been closed in different towns. Consolidation is generally partial; in a few towns, complete. Most frequently it has been accomplished gradually; in some instances, at "one stroke." In twenty-five instances pupils belonging to higher grades are taken to the high school building.

III. APPROPRIATIONS FOR CONVEYANCE

Whether the town raises money for the purpose by a specific appropriation separate from the regular school appropriation or by making the regular school appropriation include transportation—

About 60 per cent. of the towns reply, "By a specific appropriation, separate from the regular school appropriation." Forty per cent. "Make the regular school appropriation include transportation." It seems evident that the law requiring towns to raise money for school purposes should

include in the amount so raised whatever sum may be needed for transportation. In this connection, see the views of Secretary Hill, as given on pages 9-11 of this report.

IV. DISTANCES.

- (1) The conveyance of children—whether they are conveyed all the way to school or only a part of it, whether the carriage goes to the house in every case, or some pupils have to meet it at designated points, etc.—

More than 50 per cent. of the towns report that they "convey all the way from the home to the school." Other towns say that, unless the conveyance, carriage or car passes their homes, the children walk to the main street, or to designated points, or to the closed schoolhouse, or to the streets through which the electric cars run, etc. In a few towns the carriage goes to every home in stormy weather, to take and leave the children. In some towns conveyance is furnished only in winter or in stormy weather. In some cases children are conveyed to school, but not from it unless the weather is stormy or the traveling bad.

- (2) The distances children are conveyed—whether any are fixed absolutely or approximately, what they are and what conditions determine them, etc.—

Those who interpret this question to mean the distance within which children will not be transported to school at public expense make the distance from one mile to two miles. In one town small children will in some cases be conveyed to school if the distance from home is less than a mile. There seems to be no consensus of opinion regarding what is a "reasonable walking distance." Age, sex and strength of pupils, nature of the road, the amount of money appropriated and the disposition of the committee seem to be determining factors. It is the one difficult question which committees must settle for themselves, making such judicious provisions as will insure school attendance for all without undue hardship to any.

The majority of committees and superintendents understand the question to refer to the maximum distance of conveyance, and reply that they convey pupils "all the way from home to school," or "from the closed schoolhouse to the new one," or two, four, six or eight miles, as the case may be.

- (3) Questions of conveyance and distances—whether in deciding them young children are considered more than older ones, girls more than boys, the lower schools more than the high school, wooded, lonely or difficult routes more than open, easy and populous ones, etc.—

Approximately, 45 per cent. of the towns report that they give equal consideration to young children of both sexes.

Ten per cent. report that they give a preference to girls in their plans.

In 12 per cent. of the responses the character of the routes was mentioned as an important factor in determining plans.

Thirty-two per cent. make no discrimination as to children, schools or routes.

V. PAYMENTS FOR CONVEYANCE.

Whether payments for conveyance service are made to the parents of the pupils or to persons hired for the purpose, whether they are made by the trip, the week, the term or the year, with or without reference to the precise number carried, or in accordance with a fixed charge per pupil or a fixed rate per mile or some other system, with one or two illustrations of the amounts paid or rates fixed for definite services—

Payments are sometimes made to parents for the actual attendance of their children—so much per day a child, the teacher keeping a record. It is noticed in such cases that the attendance is very regular, and that the children are able to walk most of the time. Payments are most frequently made to persons hired for the purpose, or in some towns and cities to steam and electric railroad companies. Illustrations:

One parent was paid 50 cents a trip for conveying his children three miles.

A parent carries his children for \$10 a term.

A parent transports his children two miles for \$15 a year.

The foregoing may be cases in each of which the father takes his children to school as he goes to his work.

Some parents carry the children of several neighbors with their own for a moderate sum.

Five cents a day for each pupil attending school.

Many pupils ride on electric cars at half-fare, tickets being furnished by the school committee to be distributed by the teachers.

Carriages hired by the week: \$9 for transporting twelve children two miles; \$4 for transporting four children one and three-fourths miles.

Some make yearly payments as follows to persons hired for the purpose:

Seven pupils, three miles, for \$75; twenty-nine pupils, one and one-half miles, for \$80; eleven pupils, two and one-half miles, for \$85; seven pupils, two miles, for \$70.

Six hundred dollars a year, without regard to the number of pupils.

One school, one year, \$175; another school, one year, \$195.

Two hundred dollars and \$300 a year, without regard to number.

By the week for a certain number of pupils, one route, \$2.10; another and shorter route, \$1.30.

One route, \$5 a week; on a bad road, two children, \$6.25 a week.

VI. DETAILS OF TRANSPORTATION.

Persons who are charged with the duty of bargaining for and settling the details of transportation; the vehicles selected—whether covered or otherwise made comfortable; the drivers—whether selected with reference to their trustworthiness and fitness to care for children, etc.—

In 43 per cent. of the towns the school committee makes bargains and settles details; in 10 per cent., a sub-committee of the school committee; in 5 per cent., chairman of school committee; in 12 per cent., the

superintendent of schools; in 4 per cent. of the towns arrangements are made by the committee and the superintendent. In about half of the towns vehicles are covered and comfortable; in the others, not covered excepting in bad weather.

Nearly all of the drivers are reported to be "trustworthy." Some are said to be "as good as we can get." Some are of "doubtful qualifications." All committees and superintendents regard trustworthiness and fitness in the driver as of the highest importance. One committee says:

"Only such persons should be employed as we would trust with the care of our own children."

A few committees say that they have to watch drivers of conveyances, and hold them to strict account. Some complain that children are not under proper control in the carriages; but, upon the whole, there seems to be a good degree of satisfaction with such vehicles and drivers as have been employed.

VII ADVANTAGES OR DISADVANTAGES OF CONVEYING CHILDREN TO SCHOOL.

(1) Effect, if any, on promoting attendance—

The testimony upon this point is nearly unanimous that attendance is improved by conveyance of pupils. Some speak of the increase as very decided; a few say, "No effect."

(2) Effect, if any, on health of children conveyed—

A majority see "no effect upon health." A large number say, "Effect good;" and add that there is less exposure to rain, snow, cold weather, sloppy or muddy traveling; consequently, fewer colds. A few speak of the unfavorable effect of cold dinners, hastily eaten. A few others say, "Not healthy." Much depends upon the vehicle and the driver.

(3) Any trend towards needlessly short distances for conveyance or towards reduced self-reliance and sturdiness on the part of the children conveyed?—

The larger number of replies are to the effect that no such trend is noticeable, but about three-fourths as many replies are to the contrary effect. Comments:

Depends upon the firmness of the school committee.

We have a rule, and when parents and children know what it is, nothing more is said.

We meet all reasonable demands, then stand firm.

Pupils have so much done for them that they are not willing to do anything for themselves.

(4) Effects as regards (a) the character of the school buildings and equipment, (b) the classification or grading of pupils, (c) the quality of the teachers and their work, (d) the efficiency of the pupils, and (e) the general spirit of the school—

The larger number of towns report under (a) an improvement in the character of school buildings and equipment resulting from consolidation. Some say, "No effect yet." Under the remaining subdivisions of (4) there is a very marked accord that in all respects improvement is very evident.

A few comments:

Better ventilated rooms; hence more healthful.

Costs less for repairs; better janitor service.

Houses closed were in poor repair; good teachers would not remain in them.

Pupils better classified; three teachers do the work of five in ungraded school.

Too strict grading not beneficial.

Petty local jealousies lost in the larger school.

I question if the too closely graded school of 50 pupils reciting in one division is not inferior, from the pupil's standpoint, to the ungraded school of 20 pupils. Advantage of the ungraded school lies in the greater freedom of the individual pupil to advance at a rate best suited to him.

Pupils are more studious in the graded schools with only their classmates with whom they must compete.

Greater incentive and enthusiasm.

In the graded schools pupils lose the personal oversight of the teacher which in small schools is of so great advantage.

- (5) Any further results, good or bad, to be expected from the extension of the consolidation policy?—

None but good.

Pupils become better acquainted with people; hence less bashful and awkward.

The time lost by the superintendent on the road is saved by consolidation of schools.

It becomes possible to give all the pupils of the town the advantages of special teachers in drawing, music, etc.

Real estate men think it will reduce the value of their property in the rural districts.

Objection to having small children so long from home.

Our people would as soon think of having district churches as district schools.

Association with others whose lives are less restricted than their own is a gain in social graces.

Much is to be expected in moral influences, as conditions are better in the graded than in the ungraded schools. This is especially true as regards outbuildings or basements in their sanitary arrangements, and the oversight had in and about them.

Economy and efficiency.

I do not favor too great efforts to consolidate. Drivers are not and can not be expected to be men who can control children and hold their respect.

A compact neighborhood with a good school should be let alone.

- (6) The cost of the schools after consolidation—whether less or greater than before or the same, and whether with poorer, equal or better results—

Sixty per cent. of the towns report the cost as less, but the results as better; 15 per cent., cost the same, but results better; 8 per cent., cost more, but results better; 8 per cent., cost more, but results not stated; 8 per cent., cost less, but results not stated.

- (7) The public attitude towards the policy—whether one of approval not—

Reports of approval, in some cases of modified approval, are related: cases of strong opposition about as 70 per cent. to 30 per cent. Comment.

At first opposed; later approved.

Those favored by the plan approve it; those not, oppose it.

Sanctioned when committee advocated it.

Opposed to extension of policy.

No "public attitude" here.

The policy is never questioned.

Opposed.

Toleration.

VIII. CONSOLIDATION NOT DESIRABLE OR FEASIBLE.

- (1) Any large rural schools—schools of twenty-five to forty pupils—that probably would not be helped by processes of consolidation?—

More than half the replies indicate that there are rural schools that would not be helped by consolidation. Several towns report having one or more rural schools with an attendance of 20 to 40 pupils. Some special replies:

Distance and size render transportation difficult and expensive.

Retain such schools if good teachers can be secured.

Would not consolidate a school of over 20 pupils.

One school six miles from the center.

We have a large rural school of 50 pupils with two teachers.

I would prefer that a child of mine should be educated, up to the high school grade, in a school of 30 pupils under a superior teacher rather than in the ordinary graded school with the average classroom instruction. I think there is a tendency to grade too much. In a well-organized and conducted ungraded school there is an unconscious review all the time and an anticipation of what is to come. The whole is there and the part in relation to the whole.

A good district school, with 25 pupils and an efficient teacher, can be made equal to any closely graded school, and better than most of them.

Consolidation has disadvantages as well as advantages.

Thirty towns report that consolidation would help all of their ungraded schools; it would provide better houses, appliances, teachers and superintendence at equal or less expense.

- (2) Conditions that largely or wholly forbid consolidation—

About fifty towns mention objections of varying degrees of seriousness that have been urged against consolidation:

Too long distances; bad roads, blocked in winter for weeks.

Pupils too young to ride long distances.

Lack of money to pay the expense of suitable transportation.

Strong opposition of the people to the machine-like system of conveyance of pupils.

Saloon at the center; can not have a schoolhouse near.

Invasion of individual rights.

Belief of farmers that closing rural schools reduces the value of their property.

From the reports received by Prof. N. A. Upham and published in a bulletin by State Superintendent L. D. Harvey, of Wisconsin, it appears that eighteen States have a law allowing the transportation of pupils at public expense, and thirteen are availing themselves of the privilege. The following is the list:

Connecticut,	Massachusetts,	Ohio,
Florida,	Nebraska,	Pennsylvania.
Indiana,	New Hampshire,	Rhode Island,
Iowa,	New Jersey,	South Dakota,
Kansas,	New York,	Vermont,
Maine,	North Dakota,	Wisconsin.

These States have nearly half the population of the United States. Taking the States in alphabetical order, Connecticut is the first State which has a law on the subject.

The law authorizes the school visitors to close small schools and unite them with the schools of adjoining districts. The Connecticut report for 1899 gives the number of schools closed as 84. Number of children transported, 849. Approximate cost, \$12,000. The children are mostly conveyed the whole distance. Sometimes they gather at the old school-house, or at some convenient point from which the team starts. In some cases all who live more than a mile away, or some other fixed distance, are carried without regard to distance. Sometimes the town owns the vehicle and hires the driver. In one town a sum per day, depending on attendance, was paid to parents. In one town \$20 per term, for each family or bunch of children, was allowed and deduction made for absence. It was noticed that the attendance was good in such cases. The expense is less than the cost of maintaining schools. One town expending \$292 effects a saving of \$300 yearly. The vehicles are covered and made comfortable by blankets and rugs. In all cases emphasis is laid upon the fact that the driver should be selected with much care.

In Connecticut the amount expended runs from \$10 per year in the town of Bozrah to \$1,380 in Windham. Ashford pays a family or bunch of children living two or more miles from school \$20 per full term. They pay the same whether the children are carried or not. Under those conditions the children become quite robust and able to walk.

In only one case in Connecticut was the cost increased. The report says: "Transportation is a success."

FLORIDA.

Florida reports two counties instituting the plan of transporting children. From one of these, Citrus, I learn that they are transporting three small schools four to six miles, 20 pupils at \$1.50 per pupil per month. The plan is growing in popular favor and they expect to do more next year. A copy of the notice to bidders specifies a vehicle of sufficient capacity, necessary umbrellas, wraps, etc., to keep the children comfortable, a good and reliable horse, and driver who is trustworthy and

who shall have control of all the children—said driver to the B. of P. I., to deliver pupils between 8 and 8:40 and return them, leaving at 4:05, and to give a \$100 bond for the faithful performance of his work. The teacher of the central school is required to make out a monthly report registering the arrival and departure for each day, dates and causes of failure, and if there is any complaint, report it promptly by letter.

Duval County, Florida, is transporting 176 pupils at \$303 per month, having closed fourteen schools. They began with two schools two years ago and the plan has been very popular. Extra teachers hired cost \$145, making a total cost of \$448, for what had before cost \$490 per month, thus saving \$42 per month. Schools of three teachers and eight-year grades were formed. They are planning now to reduce forty-five schools to fifteen. The superintendent says: "We furnish wagonettes carrying 8, 12 and 16 passengers, so there is no difficulty in getting farmers to furnish teams and harness; this is an improvement over other ways."

INDIANA.

The next State on the list which seems to be doing something is Indiana. From the State Superintendent I received the names of six Township Trustees who are transporting children. The work is not yet general enough to have statistical information gathered. From them I received the following information and opinions:

One Trustee from Richmond reports 100 children transported from two to four miles, at a cost of \$527.25, or \$5.25 per pupil. This man reports that there was at first opposition to the plan, but that now there is very little.

From Henry County, Indiana, the "trustee" of New Lisbon reports: "We insist on the very best hack service that can be had, good wagons with springs, weatherproof top, door at rear and window to admit light, cushioned seats and back; carpet on the floor and four heavy lap robes. Heaters could be used but we have never had occasion to use them. Good teams are essential. All our roads are graveled and the hacks run on schedule time as closely as a railway train. I make it a point to employ the very best men I can find to drive and care for the children." This man transports about forty children from two to four miles with two hack lines at \$3 a day for both. He reports that there was some opposition at first but almost none now. By this plan two schools costing together \$6 per day are dispensed with, so the saving is \$3 a day. Four-fifths a cent a mile is the average cost of transportation.

To the patrons of this school I sent the following questions:

First. Is your property injured by the closing of the school and transporting of the children? Most of the answers are in the negative, but two say the property is injured, though one of these says, "The system of central schools is all O. K. if properly conducted. This is the eighth year for central schools, and it has been a success."

Second. Do the children suffer in health? The answers are invariably "No."

Third. Is the close association of children in the carriages worse than when they were scattered along the road? The answers again are

mostly, "No." One, a woman, answers that she does not think the close association so bad as along the road, if a proper person is chosen as driver. One patron says, "The control of the children has caused us more trouble than anything else," and he suggests that the drivers should make the children behave, and that the first one in should pass to the further end of the carriage, and thus avoid stepping on toes. Perhaps, by the time the plan has been running as long as street cars, this will be done. Reports say some drivers get along very well, others do not. The same may be said of teachers. One thinks they are much better off with some one to look after them.

Fourth. Does the eating of cold dinners affect the question much? Answer, "No, they ate cold dinners before the schools were consolidated."

Fifth. Is the all-day absence from home objectionable? Answer, "This is just the same as before."

Sixth. What else have you to say for or against the plan? Answers to this will be given in the summary.

Other places in Indiana report as follows: Crawfordsville, transporting ten pupils, saves \$184 annually. In another place two of seven schools have been closed. In another place twenty children are transported for \$1.45 per day. Another reports the cost of transporting ten children two miles, \$96 for a term of six months, one-half cent a mile for the distance actually conveyed. One driver reports that he makes a fifteen-mile trip daily and finds no difficulty in managing the children.

IOWA.

The school law of Iowa authorizes the contracting with other townships or independent districts for the instruction of children who are at an unreasonable distance from their own school; and where there will be a saving of expense, or increased advantage to the children, the board may arrange for transportation of any child to and from school.

In Winnebago County the plan is conducted on the largest scale of any Iowa place.

Number of children conveyed, forty-nine.

Distance two and one-half to five and one-half miles.

Number of teams used, four.

Cost of team and driver, \$25 per month.

Number of schools closed, four; six next year.

Plan has been in operation three years.

Estimated saving, \$486 per year.

Two-thirds cent a mile.

Forest City transports fifteen pupils at \$1.50 each per month, an average distance of four miles—cost three-tenths cent per mile.

Baldwin, Iowa, transports twelve pupils one and one-half miles at an estimated saving of \$11 per month. "Pupils meet at the old schoolhouse, and are left at the old schoolhouse at night. If pupil is not on time he is left. Only one has been left and he has not missed twice. Result is, pupils are never tardy and attendance is very regular. There is plenty of room for pupils in town so there is no extra expense except transportation." As far as the State Superintendent knows, citizens, teachers and pupils are pleased.

There are in Iowa 233 districts or sub-districts maintaining schools with an average attendance of less than six, and 2,500 with less than eleven. Fifty-three per cent. of the independent and 78 per cent. of the subdistricts have twenty or less. Three-fifths of the pupils are in ungraded schools.

KANSAS.

The last legislature of Kansas passed a law providing that where pupils reside three or more miles from the schoolhouse district boards shall pay to the parent or guardian of such children a sum not to exceed 15 cents per day, for a period of not more than 100 days, for conveying such pupils to and from school. A fresh inquiry within two weeks failed to elicit information that advantage is being taken of this law.

State Superintendent J. V. Calhoun, of Louisiana, says: "We are advanced only so far as talking about consolidation of rural schools and transportation of pupils. We are doing something but we need to convince and then find funds."

MAINE.

In Maine the committee may transport or pay the board of pupils at a suitable place near any established school. Maine has 1,000 schools averaging less than thirteen pupils each. "The fact that school districts have been abolished or that the school committee has suspended schools does not necessarily entitle public school children to conveyance."

MASSACHUSETTS.

The condition of the rural schools and the matter of transportation in Massachusetts is the subject of a special report by G. T. Fletcher, agent of the Massachusetts Board of Education. From this we learn that Massachusetts enacted a law in 1869 providing for the conveyance of pupils to and from public schools. The first town to take advantage of this was Quincy—closing two schools in 1874.

In 1889 Agent G. A. Walton found that the cost of educating pupils in some small schools was \$50 each, while in schools of twenty-five pupils the cost was \$10 each.

The growth of conveyance in Massachusetts is shown by the increased expenditure, \$22,000 in 1888-89; \$30,000 in 1890-91; \$50,000 in 1892-93; \$91,000 in 1895-96; \$123,000 in 1897-98, and \$124,409 in 1898-99.

To ascertain the state of feeling in Massachusetts, Agent Fletcher in preparing his report sent circulars of inquiry to each city and town in the State. About 200 replies were received, representing about all the different conditions. From this report I select a few points. More than 50 per cent. of the towns report changes in population affecting school conditions.

One town reports cost of schooling in small school \$46.82 per year, \$16.30 in central building. One district formerly had sixty to eighty pupils, now thirteen. Many towns have gained in the villages as much as

they have lost in the country. Within ten years 229 towns have practically abandoned the old fashioned district school and in its place have established central graded schools.

One superintendent reports favorable results after eighteen years of trial. Less sickness among transported children, and a saving of \$600 annually. Sixty per cent. of the towns raise money by specific appropriation, separate from the regular school fund; 40 per cent. make the regular school tax cover the cost of conveyance. "Fifty per cent. convey the whole distance, in the other towns the children walk to some designated point, except in some cases the carriage goes to each home in stormy weather. In some cases conveyance is furnished only in winter or stormy weather. Sometimes the children are conveyed to school but not from it except in stormy weather."

As to what is to be construed as a reasonable distance there is much difference of opinion. Age, strength, sex, nature of the road, amount of money, and disposition of the committee seem to be determining factors.

The weight of opinion in the Massachusetts report is decidedly in favor of consolidation and transportation. Frank A. Hill, Secretary of the Massachusetts Board of Education, in a letter dated November 15, says: "The increase from \$22,000 ten years ago to \$127,000 at the present time measures, I think, in a trustworthy way the growth of the policy of consolidating public schools in our rural towns and transporting children to stronger central schools."

NEBRASKA.

Nebraska has a law and is working under it in several places, notably, Fremont and Lincoln. One district reports a saving of \$70 a month.

In addition to the law providing for transportation, Nebraska provides that a district may contract with a neighboring district for instruction of pupils and may transport its pupils to such district without forfeiting its right to share in the State apportionment of school fund. The State Superintendent says: "Best of all is, the pupils are better taught."

NEW YORK.

New York has a law and last year annulled eighty-two districts. Two hundred contracts have been filed during the present year, and State Superintendent Skinner thinks 300 will be, before the year is over. Pupils conveyed are not enumerated separately, so there are no statistics showing number of pupils conveyed. Contracts were first made in 1896. Twenty-seven in all. The increase to over 200 this year shows the system to be very popular wherever tried.

NORTH DAKOTA.

North Dakota has a law, first in operation last July, that pupils two and one-half miles away may be transported.

OHIO.

One of the most noted examples is found in Kingsville, Ohio, a report of which was published in the *Arena* for July, 1889. The Kingsville experiment was made possible by a special act of the legislature passed for the benefit of this one town. This bill enacted that any township which by the census of 1890 had a population of not less than 1,710 nor more than 1,715 might appropriate funds for the conveyance of pupils in subdistricts. The law was based specifically upon the rate of population of Kingsville and was so worded to gain the support of legislators from other sections of the State, who were attached to the old plan, but who would not object to the object lesson. The residents of Kingsville have realized all their fondest hopes. The average attendance has much increased and better schools have been provided. Fifty pupils have been conveyed, and the annual cost of tuition has been reduced from \$22.75 to \$12.25 per pupil. The plan enabled the Kingsville school to open a new room and supply another teacher to the central school, thus reducing the number of grades in a room. The daily attendance has increased from 50 to 90 per cent., thus increasing the return from the school fund invested. Over a thousand dollars was saved in Kingsville in three years.

The law has since been made general in Ohio and is everywhere proving satisfactory. Other townships in Ohio have followed the lead of Kingsville. One county, Madison, reports a decrease of tuition from \$16 per year to \$10.48 on basis of total enrollment, and from \$26.06 to \$16.07 on the basis of average attendance. But the item of cost is not the most important. The larger attendance, more regular attendance, better school-houses, better teachers, and the greater interest and enthusiasm that numbers bring are most important.

In another Ohio place circles are drawn around the schoolhouse one mile and two miles distant. Pupils inside the first circle get themselves to school. Pupils between the two circles receive \$1 per month, and pupils outside the two-mile circle receive \$3 per month, and furnish their own transportation.

PENNSYLVANIA.

Pennsylvania has a law providing that transportation may be done at a cost not exceeding the cost before closing the school.

RHODE ISLAND.

Rhode Island has a law, and is transporting. Emphasis is here laid upon the increased attendance; two schools having graduated ten pupils together in two years, and after consolidation sixteen pupils in one year, an increase of over 300 per cent. in the number of those who remained through the upper grades.

SOUTH DAKOTA.

South Dakota has a law, and many are about convinced that where pupils live three or four miles they could have better schools at less cost. I was informed that transportation has been begun but have been unable to learn particulars or localities.

VERMONT.

In Vermont, on a written application from ten resident taxpayers of the town, a portion of the school money not exceeding 25 per cent. may be used to transport scholars, where residence is one and one-half miles or more from the schoolhouse. The popularity of the movement may be judged from the State Superintendent's report that "within the past ten years the amount expended for transportation has increased 400 per cent."

WISCONSIN.

Wisconsin has a law that permits the use of school money to transport pupils living more than a mile and a half from school, by the nearest traveled road. But so far as I can learn there is no organized transportation of pupils, though I understand three counties are contemplating it, viz., Kewaunee, Dane, and Rock.

FOREIGN.

But not alone in this country is this consolidation of schools and conveyance being inaugurated. In Victoria, Australia, 241 schools were last year closed, making a saving of 14,170 pounds per annum. The attendance is so regular and the system so popular that applications are constantly made for its extension. A reasonable excuse in Victoria for non-attendance upon public school is that the distance is—

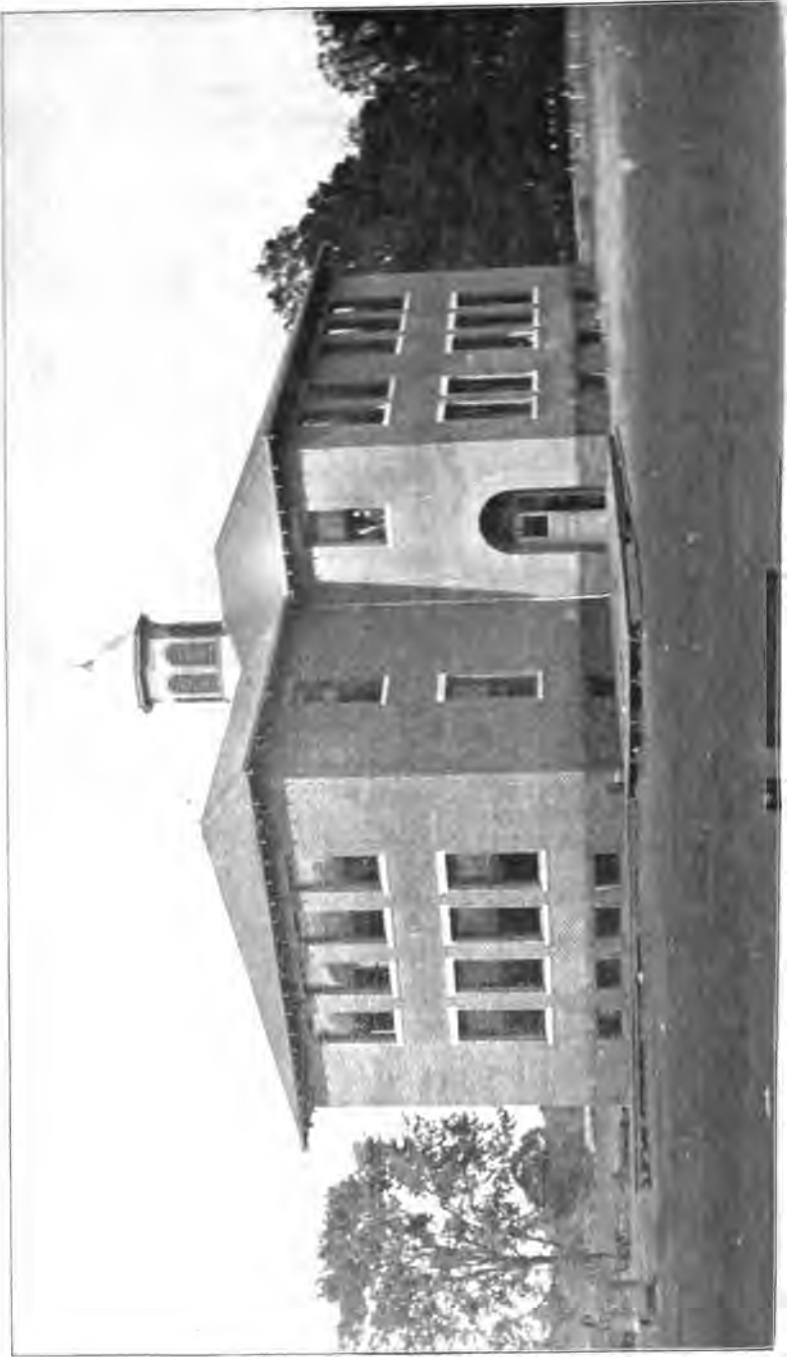
Two miles for a 9-year-old child.

Two and one-half miles for 9 to 12-year-old child; and

Three miles for a child over 12 years of age.

Victoria is a little larger than Wisconsin, with about half its population, one-half of which is rural.

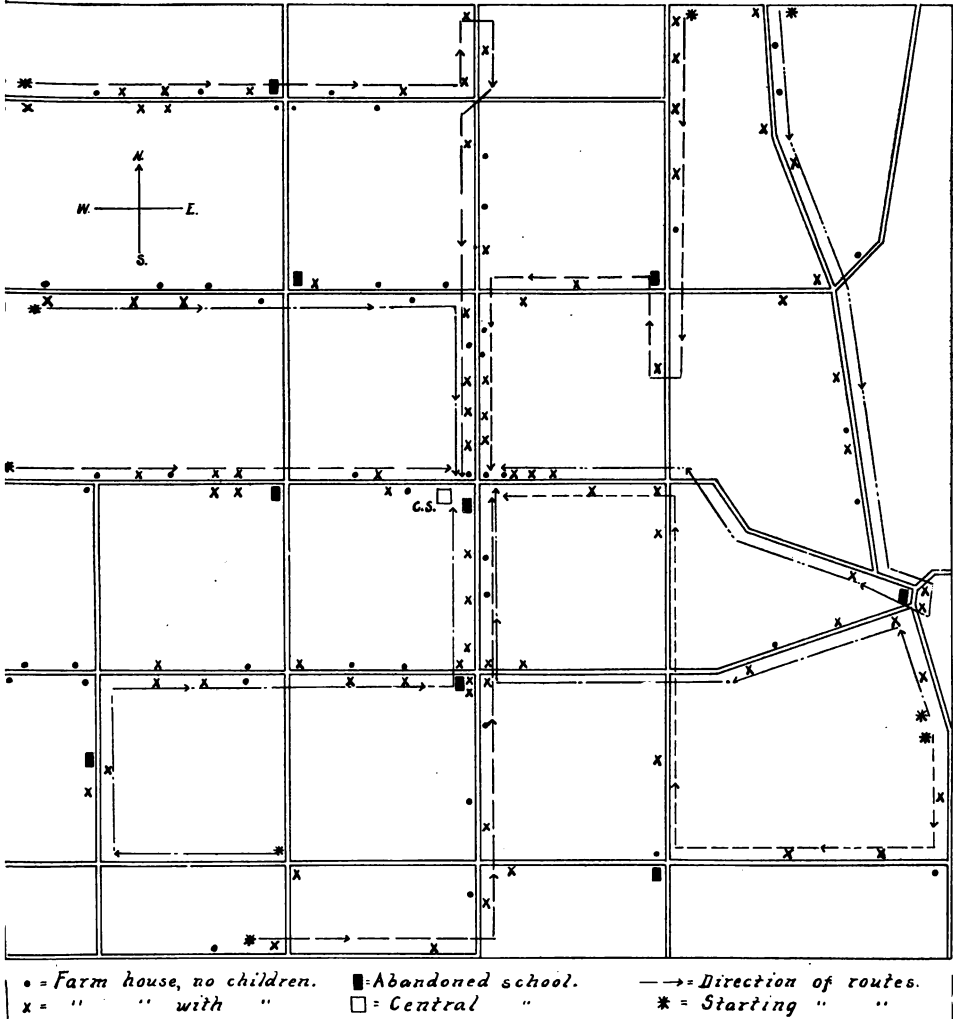
The following is taken from an article and photographs by County Superintendent O. J. Kern, of Rockford, Ill., who made a careful study of the problem of concentration and transportation. The illustrations given by him and copied below show a complete plan of abandonment of the district one-room schoolhouses, and are doubtless the best illustrations of the workings of the plan that have ever been published.



CENTRAL SCHOOL, TUMBUH, COUNTY, OHIO.

Mr. Kern says:

The above building stands in the center of the township in a community distinctively country. There is no village beyond a store and post-office, a town hall, a church or two and a few dwellings. It is eleven



Scale, one inch to the mile.

DIAGRAM OF GUSTAVUS TOWNSHIP, TRUMBULL COUNTY, OHIO, SHOWING
TRANSPORTATION ROUTES.

miles from one railroad and six miles from another. It was built in 1900 at a cost of \$6,000. There are six schoolrooms with two additional, one of which may serve as a library room and the other as an office and reception room. There is a basement under the entire building, part of

which may be utilized for laboratory and gymnasium. The building is heated by steam. To this building are brought all the children of the entire township. The educational influence of such a building over that of eight or nine widely scattered neglected district buildings is beyond controversy, to say nothing of the sanitary improvement in the way of seating, lighting, heating and ventilation. Here the Illinois party saw all the boys of the township, playing ball on a beautiful campus. In the primary room were all the little ones of the entire township, while in the high school room were many large farmer boys getting an education they could not otherwise obtain. Such a building may be had in hundreds of townships of Illinois. It would not be a burden to the taxpayers of any township of Winnebago County. Bonds could be issued for thirty years' time, money could be borrowed at 4 per cent. The annual interest on \$6,000 at 4 per cent. would be \$240, an amount no larger than the repairs on seven or eight district schoolhouses from year to year if kept up as they should be. One-thirtieth of the principal, or \$200, plus the annual interest, \$240, would make a total cost of \$440 for building purposes for the first year, decreasing every year afterwards as bonds are paid off. The total valuation of Owen Township according to the Winnebago County Board of Review for 1900 is, real estate, \$253,622 and personal, \$310,038, making a total valuation of \$563,660. An annual tax of \$440 for such a central building as here shown, on a valuation such as the township of Owen has, is cheaper in the long run than under the present plan. The accompanying diagram is self-explanatory. Gustavus joins Green Township on the east. The conditions are the same and centralization has been in successful operation for over two years. Nine wagons are used in the transportation of children at an average cost of \$1.25 per day. The longest distance is four and three-fourths miles. The central school building is a \$3,000 frame building, that of Green Township being brick. The roads are no better than those of two or three townships in Winnebago County. These centralized schools are bringing better roads.

The wagons are provided with curtains, lap-robcs, soap-stones, etc., for severe weather. The board of education exercise as much care in the selection of drivers as they do in teachers. The contract for each route is let out to the lowest responsible bidder, who is under bond to fulfill his obligations. The drivers are required to have the children on the school grounds at 8:45 a. m., which does away with tardiness, and to leave for home at 3:45 p. m. The wagons call at every farm house where there are school children, the children thus stepping into the wagons at the roadside and are set down upon the school grounds. There is no tramping through the snow and mud and the attendance is much increased and far more regular. With the children under the control of a responsible driver there is no opportunity for vicious conversation or the terrorizing of the little ones by some bully as they trudge homeward through the snow and mud from the district school. The coming problem in education is the evolution of the country school with all the added possibilities in the way of the enrichment of country life.



Fig. 4.

WAGONS USED IN THE TRANSPORTATION OF CHILDREN, GUSTAVUS TOWNSHIP, TRUMBULL COUNTY, OHIO.

CONSOLIDATION IN WEBSTER TOWNSHIP, WAYNE COUNTY.

Figs. 5 and 6 give the township plan of transportation and the central building of Webster Township, Wayne County, Indiana. In this township there has been complete consolidation of schools for several years. I made a personal visit to the township and found the citizens, pupils and teachers pleased with the plan. They

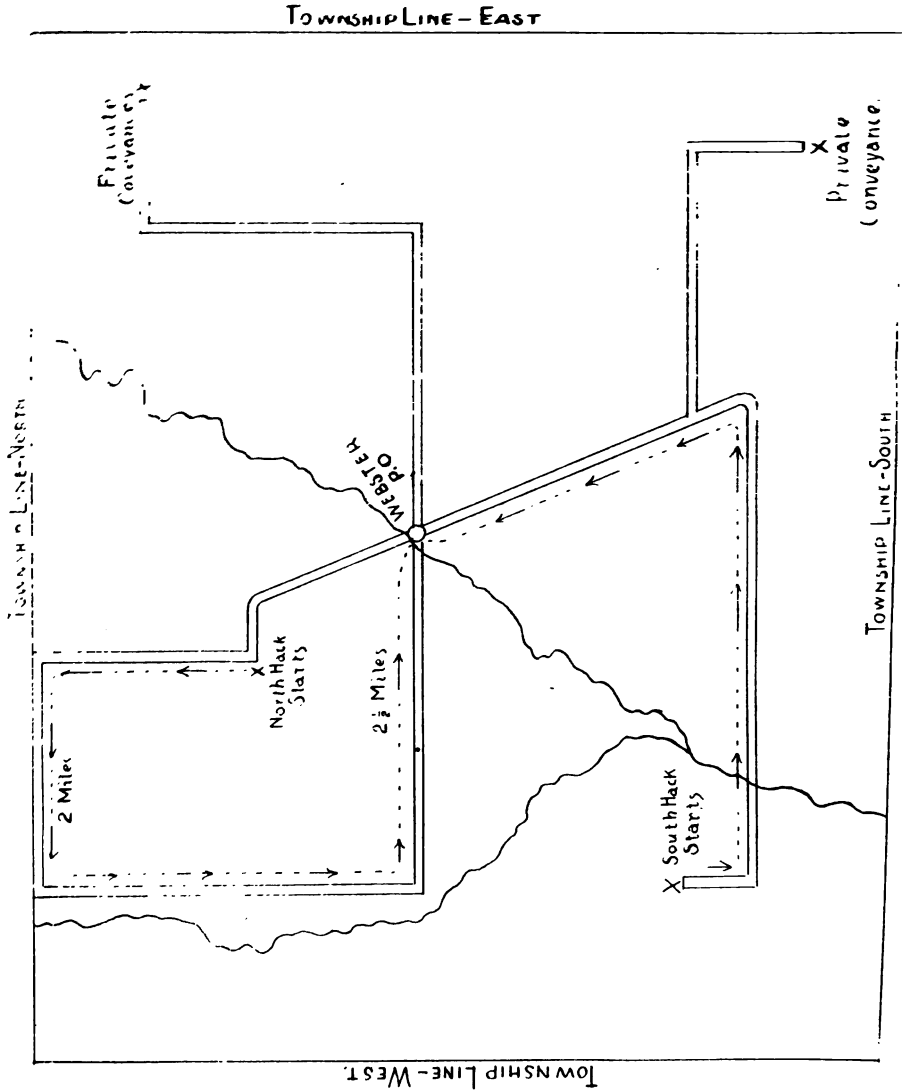


Fig. 5.

have a well graded school, good teachers, three years of high school work and good society. Compared with the old order, there is a financial saving, though a longer school term and high school advantages are secured by the consolidation of the schools.

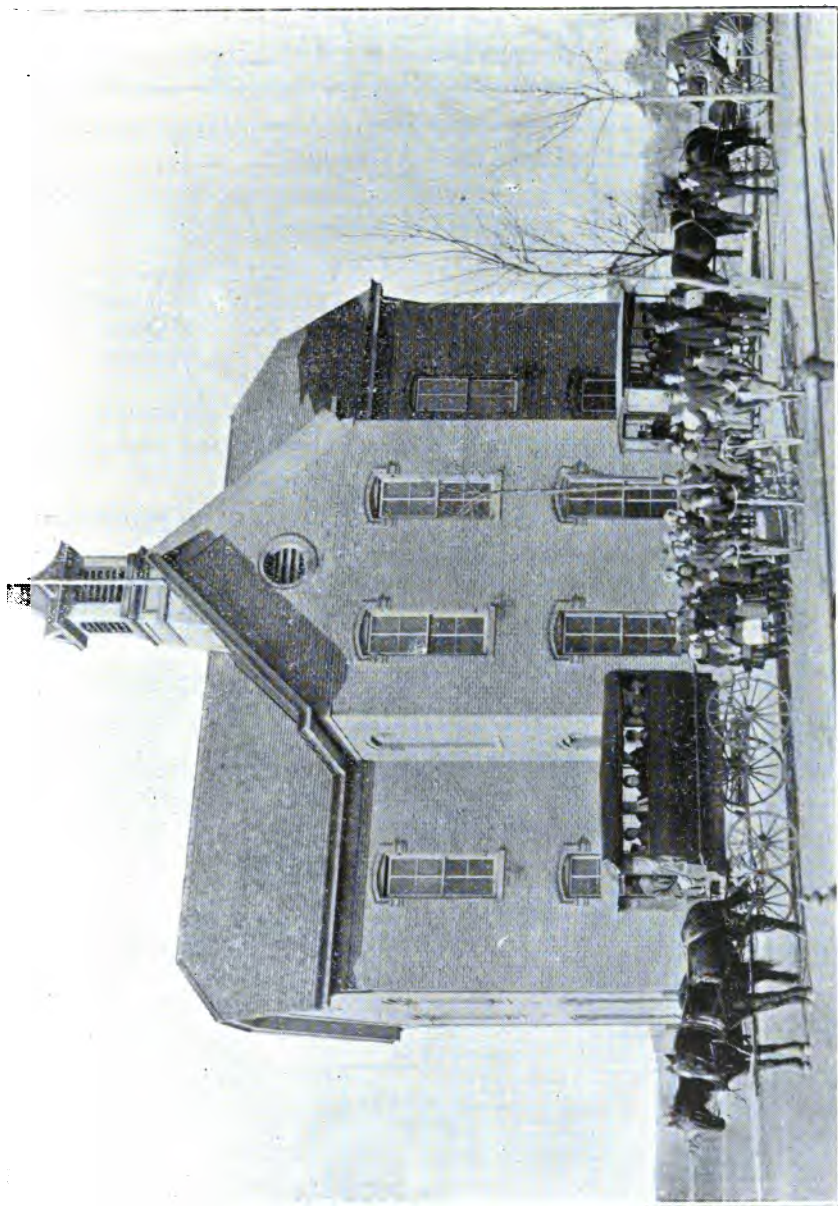


Fig. 6.

CENTRAL BUILDING, WEBSTER TOWNSHIP, WAYNE COUNTY. COMPLETE CONSOLIDATION.

CONSOLIDATION IN WASHINGTON TOWNSHIP, RUSH COUNTY.

Washington Township, Rush County, Indiana, is six miles square. The ordinary arrangement of rural schoolhouses in a township of this size would require nine schoolhouses. Mr. William S. Hall (see Fig. 9), the original promoter of consolidation in Indiana, made a rearrangement of the township plan during his trusteeship so that only five buildings are required—one in each corner of the township, one mile from the township lines, and a graded school building in the center (see Fig. 7).

The central school has four teachers, three years of high school work, and 111 pupils, distributed as follows:

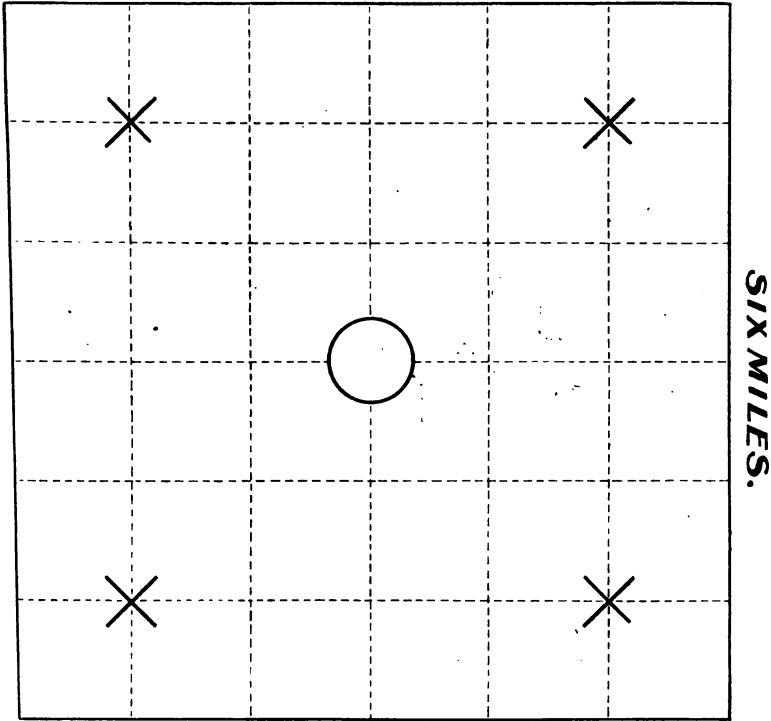
Grades 1 and 2.....	28 pupils.
Grades 3, 4 and 5.....	30 pupils.
Grades 6 and 7.....	25 pupils.
Grades 8, 9 and 10.....	28 pupils.

Sixty-eight pupils transport themselves without expense to the county. A barn was built on the school grounds, and pupils who drive, stall and feed their horses without expense.

The four country schools of the township have an enrollment of 102 pupils. The truancy officer has made only one visit to the township during the three years of the operation of the law.

Fig. 7 shows the township plan and the location of schoolhouses. Fig. 8 gives a view of the central building.

The system adopted in the township is a good one. It is economical; it makes possible better supervision; it provides a high school, and organizes the educational forces.

SIX MILES.



 *Rural One Room School Houses.*
 *Graded School, 3 Teachers.*

Fig. 7.



Fig. 8.

CENTRAL BUILDING, WASHINGTON TOWNSHIP, RUSH COUNTY.
CONSOLIDATION OF FIVE SCHOOLS.



Fig. 9.

**EX-TRUSTEE WILLIAM S. HALL, THE ORIGINAL PROMOTER OF CONSOLIDATION
OF SCHOOLS IN INDIANA.**

(c) THE ENRICHMENT OF RURAL SCHOOL LIFE.

Any movement toward the enrichment of rural school life must direct itself first to the establishment of rural school privileges, opportunities and advantages equal to those of the towns and cities—the same length of school term, equal ability in the teaching force, equal opportunities in supervision, and appliances equally as good. That the conditions are not the same may be seen from the following tables:

Average wages paid teachers per day in townships.....	\$2 04
Average wages paid teachers per day in towns.....	2 42
Average wages paid teachers per day in cities.....	2 85
Average length of school term in townships.....	134 days.
Average length of school term in towns.....	153 days.
Average length of school term in cities.....	180 days.

The cities offer teachers a double inducement when they pay better wages and give a longer tenure. This condition makes the rural school an experimental school for thousands of teachers. When it is considered that twenty per cent. of our teaching corps become new each year, and that nearly all of these new teachers begin in the country, it becomes evident that the rural schools suffer unduly from incompetent instruction due to inexperience. We must of course, give great credit to the many faithful teachers who, for considerations other than salary and length of term, devote themselves for many years to the welfare of the rural schools; but the great body of the rural school force is anxious to get into a corporation which maintains a longer term and better wages. This constant exodus of teachers keeps many country schools in a state of chaos. In one instance a rural school had ten different teachers in an equal number of years, and each in succession taught, in that school, his first term. Even though they were bright young men, who gave promise of successful careers, the inexperience and timidity of a first term made inevitable many mistakes. No lasting, nor, indeed, very important impression can be made by a new teacher upon a strange community during one brief school year.

The difference in conditions between the country schools and city schools arises (1) from a higher per capita expense in the country due to the enormous waste which comes from the main-

tenance of too many schools in nearly all townships; (2) to a lower local tax levy in the country, and (3) to the advantage which comes from the aggregation of wealth in cities.

The last point is one we can not consider; the second so touches the taxpayer that little can be done toward raising the local levy; however, there is no excuse for the practice in many communities of limiting tuition expenditures wholly to the funds distributed by the State. A small local levy in many corporations would improve the schools perceptibly. It is in the first, therefore, that the chances for improvement lie. We have already considered the matter of consolidation, but there remains a phase of it which has not been discussed, inasmuch as it does not arise from the necessity of abandoning the small school. Take any three schools, for example, in which the total enrollment is 100, or more than thirty in each school, and what are the possibilities of enrichment? In the first place, we propose a plan by which all of the pupils may be educated in one schoolhouse, avoiding thus the waste in repairs which comes from the maintenance of three buildings. Abandon two of the schoolhouses and transport the pupils to the third one, maintain eleven months of school, secure the services of a capable, professionally trained teacher who can do advanced work in addition to the common branches, and provide for the instruction of the pupils in the various grades during the months indicated in the following schedule:

<i>Grade</i> <i>1</i>	<i>Grade</i> <i>2</i>	<i>Grade</i> <i>3</i>	<i>Grade</i> <i>4</i>	<i>Grade</i> <i>5</i>	<i>Grade</i> <i>6</i>	<i>Grade</i> <i>7</i>	<i>Grade</i> <i>8</i>	<i>Grade</i> <i>9</i>
Sept. Oct. April. M.y. June. July.	Sept. Oct. April. M.y. June. July.	Sept. Oct. April. M.y. June. July.	Sept. Oct. April. M.y. June. July.	Sept. Oct. Nov. Dec. Jan. Feb. March. April. M.y.	6th. Sept. Oct. Nov. Dec. Jan. Feb. March. April. May.	7th. Nov. Dec. Jan. Feb. March.	Nov. Dec. Jan. Feb. March.	Nov. Dec. Jan. Feb. March.

By requiring the attendance of the fifth and sixth grades during nine months, the fifth grade work may be completed by March 1, the sixth grade work by the following January 1, the seventh grade work by the following January 1, and the eighth grade work by the close of the regular eighth grade year.

The time given to each grade would be as follows:

Grade 1.....	6 months.
Grade 2.....	6 months.
Grade 3.....	6 months.
Grade 4.....	6 months.
Grade 5.....	6 months.
Grade 6.....	7 months.
Grade 7.....	7 months.
Grade 8.....	8 months
*Grade 9.....	5 months.

Each pupil in the course of his rural school life would have sixty-one months of school work, an increase of thirteen months over the minimum requirement of the law, or nearly two years of instruction more than is now given in nearly all rural schools; it would solve the problem of maintaining a professional corps of teachers in the rural schools by giving employment except in the month of August; it would give to the local rural communities at least one year of advanced work; it would enable the local school officers to pay better salaries without increasing the levies, the saving of the salaries of two teachers being more than sufficient to pay a considerable increase for the better instruction, by the well trained teacher, and yet maintain a longer term; the saving in fuel, repairs and tuition would pay the cost of transporting the pupils; it would solve the problem of grading in that it provides for a maximum of six grades at one time, though there would be only five grades during the winter; it would make larger classes and thus improve the spirit of the school; it would make unnecessary the exposure of small children during the winter months; it would make a better and larger rural social unit by bringing a larger area into close contact; it would make literary societies and entertainments a possibility among the young people; it would centralize the library interests by concentrating the effort upon one rather than three library communities; it would intensify the work of each grade by reducing the number of grades under the control of the teacher during the sessions, enabling him to give much time to each grade; it would keep the school distinctly rural; and would make possible a more perfect supervision, by the County Superintendent, by reducing the number of visiting points, enabling him thus to make frequent inspections during the year.

*Rural pupils of high school age can attend only during the winter.

The objections that will be made are, first, those that are made to all forms of school abandonment and centralization; and, second, that the session during the summer would be too long. The first objection was met in the chapter on "Concentration;" the second is scarcely a real objection. The actual confinement to the school-room need not be great; for the education that would come from regulated work and play even during short daily sessions during the summer would more than offset the usual loss to the child during the long summer vacation under the present order, and would meet the valid objection of parents that at present the daily sessions are too long for the small children. The loss of time to the child during the winter months would not be so great as that which accompanies the present system of summer vacations, inasmuch as the spirit of the home about the winter fireside, and the reading and study upon the part of the child's elders, would keep the latter in an atmosphere of study, reading and general culture. The culture of the rural home reaches its highest point in the winter.

Under such a plan rural teachers might be adequately compensated. It would enable the country not only to keep its best teaching ability, but would attract good teachers who are now working in cities and towns. Why should it not? Are not the cities provided with competent supervisors who can guide new teachers with greater care than can be exercised in the country? Are there not more children in the country than in the towns and cities? Why should not the conditions be as good? The influence of a strong teacher—a teacher of broad culture, good tastes, successful experience, and mature mind—working in a given community for a period of five years as an educator, literary leader, church worker, and leading citizen, is a thing unknown in most communities. Why could not a rural teacher under the proposed plan go into a school community and work diligently for a time sufficiently long to make an impression upon it, and to lead it into a new life of culture? Are not the acquaintance with the children and homes, the knowledge of the grading and classification of the pupils, the familiarity with the strengths and weaknesses of the children and of the community sufficient reasons for the retention of a good teacher in the community for several years, if the compensation will justify his staying? Could not such a teacher establish

a local public library and give it permanency? Would not the whole educational process in the community be orderly and effective? Would not the customary loss due to a change of plans, methods, and acquaintances be overcome; and order, growth, and permanency given to the culture of the rural group?

I repeat that the first step toward the upbuilding of the rural schools must direct itself to the questions of the tenure and the compensation of rural teachers. Our laws relating to libraries, school appliances, and supplementary books are adequate, but they will not be effective until we have teaching upon a professional basis.

The argument that the plan would throw many teachers out of employment is not a valid one. When it is considered that from twenty to forty per cent. of the rural teaching corps becomes new each year, and that any such change as is contemplated above must be a gradual one, it is apparent that it will not relieve any of the teachers now employed. It would, however, affect the applicants for admission to the profession.

(d) RURAL SCHOOL ARCHITECTURE, SANITATION AND DECORATION.

When we compare the schoolhouses of a generation ago with the ones of to-day, our first impulse is to exaggerate the superiority of the latter over the former. Indeed, the modern schoolhouse with its stone trimmings, higher belfry, stone foundation and white walls is much superior to the log house, with its unplastered walls, loose floors and broken windows; but we must not exaggerate the superiority of the former, else we shall overlook the improvements which are needed to make modern buildings wholly sanitary. While the buildings of former years failed to keep out the cold and rain, it is too often true that the modern building fails to let out the impure and poisoned air. In many buildings of recent construction too little attention has been given to methods of heating, lighting and ventilating. In face of the fact that much is known upon the subject of the proper sanitation of schoolhouses, it is no longer excusable in a school officer to build a new house and embody in its construction any of the following:

- (1) Windows on both the right and left sides of the pupils.
- (2) Plain, white walls.
- (3) No ventilating system.
- (4) Heating by radiation, only.
- (5) No warm closets for the reception of wraps.
- (6) The absence of decoration.

The absence of modern methods and systems in the construction of buildings does not mean economy, for it is as economical to build a house with modern improvements as it is to omit them in the construction. Can we not group the windows on one side of the building and extend them to the ceiling with no more expense than is required to distribute them to all sides of it? If we are required to heat the air, may we not as well provide for its circulation and purification, if it costs no more? May we not tint the walls and ceiling without additional expense, and save the eyes of many children? May we not provide for the circulation of warm air through the cloakrooms by adjusting the partitions? Could not the painter or frescoer make a beautiful border around the blackboard and on the side walls, just under the ceiling, and thus decorate the room, simply?

A few counties in Indiana have erected rural schoolhouses which are wholly modern (see Figs. 10-14 and 27-38). The citizens are so well pleased with them that only the best houses will replace the old ones as they become inadequate. When the necessity for a new building arises, teachers, trustees and County Superintendents should urge its construction in harmony with the latest and most improved plans known to specialists. We should not leave to our own judgment a matter of so much importance as the planning of a schoolhouse, when modern plans and specifications prepared by specialists may be had at a reasonable cost.

In no other department of our schools are we in need of so much immediate and general improvement as in schoolhouse construction. The State Board of Health and local Health Boards have the authority to force the abandonment of an unsanitary building, but it should be required that none other than sanitary schoolhouses shall be erected.

THE LIGHTING OF SCHOOLROOMS.

VONNEGUT & BOHN, ARCHITECTS, INDIANAPOLIS. (See Figs. 21, 22; 54, 55.)

In modern school hygiene, the proper lighting of the schoolroom has come to be recognized as of equal importance with heating and ventilation. In some of the larger cities in this country, eye tests of the children have been undertaken and the results have shown that about 50 per cent. of the children suffered more or less from defective eyes, and investigation has shown that this was largely due to bad lighting of the schoolrooms.

As a general rule, in a properly lighted schoolroom, the windows should be arranged on the long wall of the room, with the light from the left side of the scholar. Light may also be brought from the rear, but this should be much subordinate to that from the left. Windows should be arranged so as not to cause any cross light. Where the light is brought from one side only, the room should not be wider than twenty-two or twenty-five feet. The latter width is admissible only when stories are very high. In rooms where windows are arranged opposite each other, the windows to the right of the pupils for the admission of subordinate light or for the purposes of ventilation should be six or seven feet from the floor. The most desirable light for the schoolroom is north light, and this exposure should be arranged where possible. In cases where the schoolroom is lighted with north light, auxiliary windows must be arranged, directly or from corridor, to admit some sunlight. The amount of light to be arranged for in the schoolroom is a subject of much discussion, but it is generally agreed that there can not be too much. The windows in the long wall to the left of the children should be evenly distributed along the length of room, with piers between as small as practical building construction will admit. As a general rule it is roughly estimated that the glass surface of windows should be at least one-sixth of the floor area. The top of windows should be built with square heads and be as near the ceilings as possible, the light coming in near top being most valuable.

Many experiments and suggestions have been made for the proper lighting of the schoolroom. Among these is lighting the room with skylights, which diffuses the light equally over the room. The objection to this is, of course, that it requires the schoolhouse to be built but one story high, thus covering considerable ground for the larger buildings and thus adding to the cost of the building. This experiment has, however, been made with a six-room building in Indianapolis, with exceptionally good results.

THE IDEAL SCHOOLHOUSE.

LOUIS H. GIBSON, ARCHITECT, INDIANAPOLIS.

I have attended the country schoolhouse of the worst type—a weak, frame building set on posts and left open from the sill to the ground so that the wind whistled through and under the open floor during the cold of winter, and admitted fleas and odors from the small stock during the warmer weather. In lieu of a bell, the teacher called the pupils by rat-

ting a window sash. The pupils did not suffer seriously from want of air. There were holes in the floor and ceiling and liberal openings around the doors and windows. There were no outbuildings.

The last intermediate school which I attended was in the city of Indianapolis. It was as tight as a bottle. There was entire absence of ventilation. There was an arrangement, however, which admirably succeeded in allowing the fresh air to escape and held the foul air in the room. The hot air register was near the floor and the ventilating register near the ceiling. Thus, all the foul air stayed in the room and all the fresh air escaped.

At this time we have a number of well-built schoolhouses in the State. The number is relatively so small, however, that they only serve as illustrations.

I will here undertake a journey through a schoolhouse, not one that has been built, however. It is ideal, but not so much so as to be out of reach. There are some compromises with respect to what I believe to be right, but they are not great. The lot is on a corner, we will say. It is 135 feet front by 195 feet deep. The building has eight rooms and is of brick. There are no tawdry, meaningless towers, no dormers which are without use or significance, nothing that is shabby or possesses decaying qualities. However, it is a beautiful building, built like every beautiful structure which has found place in the history of the world's architecture with direct relation to its utility. First of all it is suited to the purpose for which it is intended. It expresses its purpose. The decoration is applied where that decoration may become a part of the construction. But no decoration is absolutely constructive for its own sake. Every bit of decoration is carefully studied, worked out with taste and executed with a fine hand. On the impost of the doorway there is a terra cotta reproduction from a clay cast of some distinguished event in the world's history. The grade line of the building is about eighteen inches above the sidewalk. The entrance to the building is six inches above the established grade. From an enclosed vestibule one goes up four and a half feet to the main corridor. This stairway is eleven feet wide and on either side of it there is a stairway descending to the basement. The basement is divided through the center, one side for boys and the other for girls. It contains water closets, urinals, washstands, racks for wheels, space for heating apparatus, storage for fuel and limited play space. The floor throughout is of cement, excepting, maybe, in the case of a room that is used for a gymnasium. The ceiling is plastered and the brick walls tinted. There are a number of windows which admit an abundance of light into the first story is 13½ feet high. In the rear, going up out of a 24-foot corridor, is a broad stairway starting up in the middle, running to a landing and branching off in two parts and thence going to the second story. This corridor on the second floor continues to the front end of the building and forms an assembly room. There are four schoolrooms connecting with this large room, which is 24 feet in width and 56 in length. The landing between the first and second stories is broad enough to afford a space for plants and there are three great windows shedding light into the lower corridor as well as the one above. In the lower story there are four schoolrooms and the principal's room, with toilet.

FLOORS.

All floors are edge-sawed yellow pine of narrow strips, say two inches in width. The stair-treads are of quartered oak and all floors are finished in wax. Yellow pine is practically a non-absorbent material and absolutely so when waxed. The waxing is work which can be done by people about the building. It is not expensive in its application; it is very economical in the amount of service required; it absolutely and positively eliminates all scrubbing, and is clean when finished. Such a floor is sanitary and is economical in every way. A floor that is not filled and waxed can not be kept clean.

The rooms are 26 by 30 feet. That gives about 19 square feet to the pupils, or 263 cubic feet for a 13½-foot ceiling. A prominent superintendent suggested to me that schoolrooms should be made smaller than the above size so that the eager school board could not possibly crowd more than forty pupils on one teacher. But a 26 by 30 foot room gives good space, not alone for pupils and teachers, but allows space for a manual training workbench, clay table, and sand table. In some of our schoolrooms the children do simple printing. While we should consider the number of pupils in a schoolroom from the side of health alone, it is also well to bear in mind, for argumentative purposes with the public, that a teacher can do better with forty than she can with fifty or fifty-six pupils. It is a measure of economy in more ways than one. Of course, the building costs less for smaller rooms, but it is also argued that the teaching will eventually cost no more for the teacher who cares for forty pupils than the one who cares for fifty or fifty-six. This is because of more rapid educational progress. The ordinary-sized room for fifty-six pupils, it is well to bear in mind, is 28 by 32 feet.

WALLS.

This room is provided with the usual amount of blackboard surface, but all that is not actually in use is covered by stretching jute over it, and on this jute is pinned drawings by the pupils and prints of portraits and good pictures of current events, which are so common in these days of cheap printing. We notice other framed pictures on the walls and that the window ledges are broad and on them are flowers. The wall surface is tinted a light green, light terra cotta or a very light brown for all of that part of the room which comes below the top of the blackboard, which is also the line of the picture molding; and light yellow or light tan at the top, which color is well adapted to receiving and distributing light.

LIGHTING.

The room is lighted from one side only—from the left side of the pupil. The teacher looks against a wall and not windows, and receives light from her right. There has been a good deal of temporizing on this question of lighting from one side only. Every one, so far as I know, regards it as theoretically advisable but not always practically possible to carry the light that distance into a room. This difficulty has recently been set aside by a very simple discovery—the use of what is known as common factory ribbed glass. This glass costs about the same as double strength glass. Mr. Chas. L. Norton, of the Massachusetts Institute of Technology, says

it has light carrying power quite equal to the high priced prisms. Of course it is not suited to hooded windows that we find in narrow alleys in the down-town streets; but on the basis of Mr. Norton's investigations and experiments for uses in school buildings and factories and other isolated structures, it has ideal light-carrying powers. Of course corrugated or ribbed glass will not bring any more light into a room than any other glass, but it will distribute it differently and better. The lightest place in a room where ordinary glass is used is on the floor next the window. This is not true in the case of the corrugated glass. The light is distributed at right angles to the sheet across the room. This glass is being used very extensively at this time in the large spinning and weaving rooms and other manufactories of New England. The discovery of its efficiency has only recently been announced. It has not been realized much longer than a year and a half. The glass is the ordinary ribbed glass of 19 to 22 corrugations to the inch. In putting it in the sash the corrugations should, of course, run horizontally; otherwise the light would go directly to the floor as under ordinary circumstances. Another nice thing about glass of this kind is that light is more generally diffused, and while there is the same volume of light coming into the room as through white glass, there is, because of its general distribution, less of shadow. The light is uniformly diffused. The lower part of the lower sash should be glazed so that the pupil can see out.

SHADES.

The question of shades is an important one. The ordinary shade is attached to a fixture at the top, so that the most valuable part of the window, that is, the top part, is always more or less obstructed by the curtain and the curtain fixture. On the other hand, shades which are attached at the bottom cut off the view of the pupil to the outside. Fixtures have been devised which admit of the roller and roller fittings being raised and lowered. That is any Hartshorn or other spring fixture is made adjustable throughout the height of the window. Under that arrangement the lower part of the lower sash can be left open and any portion of the upper sash can be left unobstructed by the curtain. This lets in the light from the top of the window and admits of a view from the lower part of the bottom sash.

The windows are not mere slots or openings left in the wall, but are broad openings extending about three-fourths of the width of the room and from the ceiling to within three feet of the floor. Understand, I do not state that the window reaches close to the ceiling, but absolutely up against it so that there is no room for a head casing and so that the plastering of the ceiling runs into and against the frame and forms the top of the opening. In the horizontal direction the window surface is interrupted by very narrow mullions, and strength is given them by small steel columns. The window frame sets in the center of the wall. This builds in the frame tight so that no drafts of air can work in from the outside. At the same time this arrangement brings the glass close to the outside of the wall and cuts off less of the glass in shadow than is usual in the ordinary method of setting the frame flush with the inside of the wall. I entirely dispense with woodwork around the window and finish with

plaster round cornered. The only wood casing is the stool and apron which comes under it. I have gone into the window description to some length because this is a new feature in schoolhouse construction and deserves to be elaborated.

BLACKBOARDS.

Many attempts have been made to change the color of the blackboards by making them gray, maroon, and other less offensive colors than the conventional black; but as yet that has not proved an established success. However, with the colors which I have suggested for the wall tinting, black is not particularly offensive, especially if the top and bottom be stenciled with a narrow border of rich Indian red and of primitive blues. This was originally a favorite color scheme of decoration in the early Pompeian structures, and when carried out in restorations or imitations it is very effective.

VENTILATION.

As to the air which enters our ideal schoolroom. The heat is generated by a steam plant in the basement. All of the radiation, excepting that for the corridors, is located in the basement. The air first passes through a tempering coil and is forced by a large blower through additional radiating surface; after which its proper equivalent of moisture is added to it on its way to the rooms. Thus we have taken pure outside air, passed it through steam radiators, given it its proper amount of moisture, and then forced it into the room under pressure. The air enters the room through a large register above the blackboard line, thence moves to the ceiling, against the cold walls and window surfaces and down to the floor. Corresponding to the supply register there is another one which provides for the exit of the air. This is next the floor and on the same wall surface as the supply register. The air has been forced into the room by a steam engine and a large pressure fan, and as it is forced in, a corresponding volume of air is forced out. The warm, pure air goes to the ceiling, is forced down and out as it cools and after it has been used. The use of the steam engine is not as extravagant as it would appear, as all of the steam which is used for power is again used in the coils and with very slight waste. If the conditions under which this school were operated were ideal, frequent measures of the volume of air coming into the room would be taken and frequent analysis of its quality and humidity be made, and reports made to a proper bureau of officers in no way directly connected with the management of the school system proper. This organization would compare to the district police of the State of Massachusetts, which sees that the Board of Health regulations of that State are carried out in schoolhouse, factories, mills and public buildings and other structures of like character.

The fan system of ventilation is better than any other because it is absolutely positive in its operation. It supplies a given quantity of air from the outside at all times and without variation in quantity or quality.

CLOAKROOMS.

The matter of cloakrooms is deserving of serious attention. There was a time, of course, when a separate cloakroom was regarded as an extravagance by the burdened taxpayer. Then the surplus out-door garments of the children were hung around the wall on pegs. One of the most intelligent sanitarians on our school board suggests that each pupil should have an individual compartment, not necessarily locked. In a properly warmed and ventilated cloakroom this would present a satisfactory arrangement. This affords means for the drying of damp clothing and at the same time proper separation. Cabinets for cloaks, wraps, etc., are now being made which have a roll top covering for the entire length of the cabinet and which provide means of drying and ventilating the clothing. These are usually placed along the corridor walls and are favored by some school boards because they eliminate cloakrooms altogether and in that way largely reduce the size and cost of a school building.

The assembly room is now a part of every school building program, and while its relation to the sanitation is not distinct, on the other hand the bringing together of the pupils in large numbers and the association of the teachers in connection with instruction on special subjects and in class exercises is a measure of economy in education which may be esteemed not only because of the saving which it makes in school funds, but because of the economy of time and energy in its relation to the education of pupils.

Some one says, of course, that this is a very expensive building. If rationally constructed and without the towers, dormer and gable excrescences which have been so common in much of our recent schoolhouse architecture, and if designed along simple artistic lines, this building will cost no more than many which are externally more pretentious, less serviceable and less comfortable.

For sanitary reasons, of course, school buildings should be large; that is, contain many rooms. This renders a complete equipment more readily obtainable on the grounds of expense, and reduces the per capita cost of operation and administration. Manifestly twenty-four rooms in two buildings would cost less than the same number of rooms in three buildings, and the cost of maintenance would be proportionately less in the larger structure. Certainly it would be advantageous even in the case of country schools to make them as large as possible and thus secure a higher grade of service as well as a lower per capita cost of operation. But there are and must be one-room buildings.

VENTILATION.

The means of producing ventilation may be classed under three heads: Natural, mechanical or forced ventilation, and that by aspiration. The natural is produced by the action of unequal density of air caused by the varying conditions of temperature indoors and out. It is not reliable. It will be noticed in the inspection of school buildings heated by both furnace and steam and provided with flues passing from the basement and connecting with the various rooms that those carried through a cold garret are generally found useless for ventilating purposes. When the air is

heavy these flues are liable to work backwards. Such ventilation is practically worthless.

Ventilation by aspiration means heated chimneys or shafts for the removal of columns of vitiated air from occupied rooms. Where skillfully put in, fair results may be expected through a very liberal supply of fuel, but at best such an apparatus is not found to be successful under all conditions.

The mechanical system is produced by the action of fans or similar positive devices. By this process the atmosphere of a room is constantly renewed and normal purity maintained at all times.

It is well to understand that the pure air supply to an occupied schoolroom should be constant—the same at all times. The registers should be so arranged that they can not be closed. The change of temperature is made by adding, through mixing valves, more or less of warm or tempered air as may be required. By forcing an additional supply of cold air which has not passed through the radiators into the schoolroom duct the temperature will be reduced without reducing the quantity of the supply.

Another branch of the sanitation relates to dry and water closet and allied fixtures. It is true of our people that any new thing goes better than any old thing. The dry closet idea invaded this country a few years ago and took everything before it. In some instances air drawn from the schoolroom was drawn over the excrement for the purpose of drying it and presumably passed out through the ventilating stack to the outer air. There were conditions, however, under which the air went down the ventilating stack, over the excrement and urine, back into the schoolroom and finally became a part of the pupils again. This was the dry closet in its worst form. The dry closet in its best form is by no means ideal. The material of these closets and the flues connecting with them soon become foul. Brick, as we know, is absorbent, and where any part of the trenches are a part of the structure of the building, it is impossible practically to purify the building after the dry closet has been used a short time. One who has probably had as much to do with putting in dry closets as any one in this part of the country, said that if they were constructed so that all of the brick work and ducts composing and leading to and from them could be taken out and renewed every two years, the dry closet system was not obnoxious. This in itself is a condemnation.

WATER CLOSETS.

The water closet system of disposing of human offal is unquestionably the best and in the long run the cheapest. It should be put in, however, under proper plumbing regulations and subject to competent official inspection and approval. This State is sadly in need of legal plumbing and sewer regulations. I will venture to say that more than ninety-five per cent. of the buildings in which there is plumbing work, are connected with the sewers or vaults through soil pipe connections alone. This does not take into account the defective trapping, venting and other connections.

There is much of detail and some of principle which I have necessarily neglected. When we are sick we send for a doctor. Cure by correspondence, faith or even paper reading is not popular at this time.

THE INFLUENCE OF FINE SCHOOL ARCHITECTURE AND DECORATION.

(See Fig. 63, and following.)

SEVERANCE BURRAGE, PURDUE UNIVERSITY.

For the inspiration of this subject, I am indebted to a speech of the great Gladstone, made somewhere about 1880. The inspiring paragraphs run as follows:

"The sense of beauty is not, under natural and equal circumstances, the favored inheritance of a few, but is meant to be, should be, and may be the universal inheritance of civilized mankind. * * * We are now coming, we have almost come, to the belief that music is a general inheritance, that the faculty of music is a common faculty of the people forming an intelligent community. Was that so fifty years ago? I remember the time when you were laughed at if you contended, as I was stoutly contending, that the human being, as such, was musical; you were considered a fool, a dreamer, an enthusiast. People used to say, 'I can't tell one note from another; I don't care a bit about music,' and I replied by saying, 'If the nurse who carried you when you were six months old had continued to carry you until you were forty, you would not be able to walk.' If there be those who have no sense of music, they are analogous to those who are born deaf or blind and consequently are entitled to sympathy as being excluded from one of the purest enjoyments Providence has ordained for human nature. I believe it is exactly the same with the sense of beauty. * * *

"The original capacity lies in the nature; that capacity is modified from generation to generation, and the cultivation of it in certain generations affects the capabilities with which the children of those persons are born into the world. Those whose parents have been conversant for a long period of time with the objects of beauty and the exercise of the faculty of taste have great advantages, a considerable start in the race. * * * But do not let us be discouraged because we have not any of these advantages. * * * In every one of us there is enough to work upon; it is upon the manliness and the fidelity of the effort made to improve that which we possess that the ultimate result will depend."

So spoke the grand old man.

In the hustle and rush after the almighty dollar which is so characteristic of the American people, particularly in the central and western States, the desire for beautiful, artistic, classic, tasteful things is lost. It is impossible for the people to see how an artistically built schoolhouse can assist in the pupil's education for money getting after they are graduated. So they quickly drop the services of the architect, and hire the contractor, who, as a rule, has no ideas as to fine art. They lose sight of the fact that every fiber of the child that is educated to exercise the faculty of taste in choosing beautiful things is going to be invaluable to this child after he has grown up, as a source of recreation, rest, and real pleasure.

The farmer and the sailor always have their eyes on the sky, but they do not see the beautiful afterglow, except insofar as it means a fair day on the morrow. They see no fine picture there. This is for no other reason than that their ancestors for generations back have not had their

faculties for seeing fine and artistic things educated. Their sense of the artistic is numb, asleep. But as Gladstone says, it is there, and perhaps will require more than one generation to bring it out, to awaken it.

It always gives one a sense of pleasure to hear the hard-working student in mechanical or civil engineering, or any allied course, exclaim: "Oh, what a magnificent sunset, what glorious clouds!" It shows that his mind is not always on wheels, or on figures; that he derives rest and pleasure from the beautiful scenes of nature round about him. We feel at once that when this young man selects a home for himself, that it will be artistic, and as far as possible, in harmony with its environment.

It must be admitted that the beauty of the schoolhouse, both inside and out, from the standpoint of fine art, can not but have a lasting influence upon the children thrown daily into such an atmosphere, lasting not only through the life of these children, but through their children and their children's children. Just so does the sanitary schoolhouse with its sanitary surroundings, influence the health, not only of that present generation of pupils, but of those for generations to come.

Educational theories have so far broadened that it is no longer claimed that the old schools were the best schools, where hard benches, poor print, plain walls, and bad air were the constant companions of the pupils while they studied. Because Benjamin Franklin, or Abraham Lincoln or anybody else was successfully reared under such unfavorable conditions, is no reason why the boys and girls of to-day, who have an entirely different environment, should be subjected to any unnecessary hindrances or dangers.

"In any community there are a few exceptionally healthy and bright pupils who will make their marks, no matter how poor their instruction and surroundings. But it is the object of the public school system to educate all of the children. It is recognized that all can not stand hardships and unfavorable conditions such as are mentioned above. In fact, comparatively few children of the present time could go through the old school system without receiving some mental or physical scar resulting from the bad conditions. Perhaps the child of to-day is a more delicate organism than the child of fifty or a hundred years ago. Whether this be true or not, unnecessary stumbling-blocks must not be placed in the path of his educational career.

"In order to realize that this fact is appreciated by modern educational authorities, it is but necessary to step into some recently built school and compare it with any schoolhouse of long ago. The difference is at once seen. The tendency of the day is toward making the work as easy and interesting as possible, the surroundings healthful and beautiful. The studies are arranged in their proper sequence,—the hours of work and recreation are balanced and regulated, the rooms and halls are more or less decorated with pictures, statuary, photographs, and plants,—all tending toward the rounding out of the pupil's character. While we may take great pride in this advance, the fact must not be overlooked that there are many schools that are in this respect behind the times. It happens here also, as in every reform, that there are some instances of overdoing, in which matters are carried so far that much if not all of the benefit is

¹ From "School Sanitation and Decoration," Burrage and Bailey.

lost. Some teachers are naturally more enthusiastic than others, and perhaps carry the 'open-window' idea or the 'picture-hanging' to excess, while others turn their backs on the whole thing as being outside their province of work. It does not seem right that one school in a community should have beautiful architecture, sanitary surroundings, and fine interior decorations, while the schoolhouse only a few blocks away may be poorly located and constructed, badly ventilated and heated, and have no beautifying features inside or out. It is evident in such a case that all the children in this town are not given equal opportunities for education. Furthermore, if we compare the amount and kind of decorations in the various rooms of a single building, we can not fail to notice the lack of harmony. One room may have a few fine works of art, good taste being shown in the selection and hanging; another may have its walls literally papered with photographs and pictures cut from magazines; and still a third may have no decorations whatever. Such variations are largely, if not wholly, due to the teachers."

Properly distributed decorations about the halls and rooms of a schoolhouse will certainly do more than simply attract the attention of the children. Pictures in the kindergarten room must be of a character such as to be easily understood by the child of five years. And in the other rooms there may be historic casts, reproductions of paintings, portraits of great authors or otherwise historical characters. In no case must the pictures or casts be arranged as in a picture gallery or art exhibition, where various pictures and so on are placed so near one another that the individual effect is entirely lost. Each work must be appropriately and artistically framed, and then hung in such a place as to bring out its best effects. When properly done, such interior decorations can not fail to bring out manifestations of interest on the part of the pupils. It has been found in places where this has been the practice, that the children do not hesitate to express their opinion as to the artistic merit of this or that work of art, or perhaps call attention to some matter of detail that does not meet with their approval. Their criticisms or decisions of course need not always be accepted by professional or experienced artists. An example of a criticism that took an exceedingly practical turn is that made by one of the janitors in a Philadelphia school. He "wished that Marcus Aurelius had shaved before he sat for his cast, as it was awful hard to get the dust out of his whiskers."

The influence of good paintings and casts, then, can not be overestimated. The admiration and the desire for the beautiful, the picturesque, is aroused in the youth, and no matter how in after years it may be repressed and even neglected altogether, in the up-hill struggle for existence, the effects of this early atmosphere, this early training, will never be wholly obliterated. These effects are seen in many homes, where gaudy pictures and dirty and grimy windows have given place to copies of fine pictures, and to window sills covered with beautiful plants. Unfortunately, young America seems to demand a highly colored, life-size, unrecognizable portrait of their favorite hero, rather than a modest black and white portrait, and the money-making printer is too ready to flood the country with horrible, unsightly pictures to satisfy this demand. It is such dwarfed, or better such degenerated taste, that fine school archi-

ture and artistic schoolroom decoration will gradually, but surely, eradicate.

As Emerson says: "For beauty, truth, and goodness are not obsolete; they spring eternal in the breast of man; they are as indigenous in Massachusetts (we can certainly substitute Indiana) as in Tuscany or the Isles of Greece. And that eternal Spirit, whose triple face they are, moulds from them forever, for his immortal child, images to remind him of the Infinite and Fair."

SOME PROBLEMS IN SCHOOL SANITATION.

SKYERANCE BURRAGE, PURDUE UNIVERSITY.

A schoolhouse is built with a definite object. In it boys and girls are to be trained for their combat with the great world. In one sense, the schoolhouse is the machine shop, and the children are the machines that are to be so adjusted that they may be able to bear the full burdens of intelligent citizenship. These human machines are very complicated in their construction, and like other machines, have to be treated most carefully or they will get out of order. Now it is the object of those engaged in the study and practice of school hygiene and sanitation to so protect these pupil-machines that they may receive their training without being subjected to the many dangers to health that so commonly exist in our public schools, thus making it impossible for them to enter upon their life work with their bodies unimpaired by their environment during this training.

Many city schoolhouses of to-day are models of architectural and sanitary perfection, but the older city schoolhouses, and by far the majority of country schoolhouses, have been constructed and are being maintained without the slightest regard to these matters. It is the purpose in the following pages to give some attention to the more common faults in these older schoolhouses, and to give, as far as possible, remedies for these faults.

Most of the older schools are badly heated and badly ventilated, if they happen to be ventilated at all. There are several reasons for this. Heating and ventilating may not have been properly understood by those erecting the building; or they may have understood the matter sufficiently, and put in plants that were efficient under the conditions existing at the time of construction, but the conditions having changed, they no longer do their work; or, another reason, a school building may have a good heating and ventilating plant, but it is not doing its work properly, because it is not intelligently managed. The only way to properly deal with such problems as these is to call in an expert on heating and ventilating and let him solve the difficulty. The matter should not be left to any carpenter or contractor who might happen to be around, although at the time it might appear that he would do the work cheaper than the expert; but in ninety-nine cases out of a hundred, money will be saved in the end by taking what looks to be, at the time, the more expensive course. There are men who have been trained to do this expert work, and are capable of dealing with these intricate problems.

In the smaller country schoolhouses of one and two rooms, the most common method of heating is the unjacketed stove. This is never satisfactory, as one portion of the room is overheated, while another part is not heated at all. Such a stove, moreover, heats the air that is already in the room, not taking fresh air from the outside, and this impure air together with the effects of the hot iron, are exceedingly debilitating. Many of the headaches undoubtedly come from this very source, and the bodies of children subjected to such conditions will be susceptible to any of the more serious diseases. If the stove be jacketed, and proper provision made for the removal of the foul air, and for a bountiful supply of fresh air directly from the outside to supply the jacket with air to be heated, the objections to the stove are removed. It is sometimes the case that the jacketed stove will not heat the rooms, in which case it will be necessary to have a furnace beneath the schoolrooms. This method is by all means the most satisfactory, as the room can be supplied with fresh, heated air without the production of draughts, and there is much less chance for the floor to be cold, as is so often the case with rooms heated by the stove in the room.

The air that passes into the jacketed stove, or into the cold air box of the furnace, should always be taken from that side of the building farthest from the sanitariums, thus avoiding the possibility of impure air reaching the schoolrooms.

Attention should be given to the amount of moisture in the air, particularly in the above mentioned methods of using hot air. It often happens that schoolroom air is too dry, in which case the effect is very depressing. This factor is by no means as important, however, as that the air should be pure, and not overheated.

Want of cleanliness is one of the greatest faults in these older schools, both in the city and in the country. In many instances, the dust of several years has accumulated on the floors and walls, and in some cases the windows, the sanitariums or privies are rarely if ever, attended to, and in many other ways, the schools show very clearly the lack of proper attention to this simple matter of general cleanliness. Each schoolhouse should undergo a most thorough scrubbing and cleaning before the opening of each term. And it should not be left for the teacher to keep it in this condition. One of the reasons for this large number of uncleanly schools is the lack of proper janitor service. Too much is left for the teacher to do. Now it is a well-known fact that school teachers are about as hard worked class of people as we have in proportion to the pay that they receive, and we can hardly expect them to do the janitor work in addition to their regular teaching. It must not be expected of them. A dirty school has an exceedingly bad effect on the children who attend it, and may give rise to slovenly habits in the children that will last them throughout their lives. It is unnecessary to say that a dirty school is unhealthful.

There is a right and a wrong way to keep a schoolhouse clean. For example: It is the common practice in public buildings to sweep and dust an hour or so before the people are gathered together. This is the practice not only in theatres and churches, but also in many school buildings. If sweeping and dusting is done at such a time, the dust simply circulates about in the air, so that when adults or children come together, it is in the

best possible position to cause them trouble. They can not avoid breathing it. All cleaning of the school floors and furniture should be done daily at the close of the afternoon session, after all the pupils have left the buildings. The windows should be wide open during the process, and all dust that settles on the desks and furniture should be carefully removed with a damp cloth. In order to prevent so much dust from flying about in the air during the process of sweeping, it is advisable to throw damp sawdust over the floor. If the school has hard wood floors properly laid and oiled, they may be kept clean by wiping with a damp cloth. All the floors and walls should be washed carefully at much more frequent intervals than is usual, if any regard is to be shown for cleanliness. The moral effect of a clean school building must be recognized.

Consider the unclean and untidy condition of the homes of many children, and the effect upon them of entering and becoming a part of such schools. A well-kept school can not but have its good influence, if the child is made to feel that the school building and one of the rooms and one of the desks belong to him for the time being; and if everything around the building, the room, and the desk is clean and neat, the tendency will be for him to keep the desk and himself in the same condition. On the other hand, we can readily imagine the results if the school building and its various parts are uncleanly.

A few words about the dust and dirt in the schoolroom are of interest here. Of what does this schoolroom dust consist? Much of it is brought in upon the clothes and shoes of the pupils, and much is blown in as dust from the street. There are also small organic particles that are given off by the bodies of the children. Dust is known to be the carrier of disease germs. Consumption and many other infectious diseases are spread through its agency. Then again dust in itself is an irritant to the eyes and the air passages. It is, therefore, important that all possible means should be taken to keep the amount of dust in the schoolroom down to a minimum.

Badly laid floors are a great factor in promoting dust in the schools. The cracks collect the dust day after day, and thus buried, the dust is able to evade the mop and the broom. Such floors can never be thoroughly cleaned, and the only remedy for this unsanitary condition is a well-laid new floor, having no cracks whatever.

In connection with dusty floors, the question of the use of some form of "germicidal" or "dustless" oil is one of interest and importance. Objection has been made on the part of the teachers and girls to the use of such oil on the floors, on account of the tendency to soil the dresses.

But if the oil is put down in the proper way, so that there is not a sufficient amount to become gummy on the surface, the tendency to give off dirt is slight. The principal trouble with such floors is that the janitor does not take the pains to clean them as carefully or as often as he does the ordinary dusty floors. Consequently, the oily or gummy surface becomes laden with dust, and when swept by the girls' and teachers' dresses naturally gives up some of the dirt. If these floors are very gummy, it shows that they have not been properly oiled, and it is necessary to give them a scrubbing with gasoline in order to remove the gummy surface. From the sanitary standpoint, too much can not be said in favor

of floors treated with some such oil. In many examinations of the bacteriological contents of the air of rooms that have these oiled floors, the results invariably show a smaller number of bacteria than do similar examinations made in rooms whose floors have not been so treated. The ease with which they are swept, and the absence of flying dust during the process of sweeping, are also important factors in their favor.

It is difficult to impress upon the janitor the fact that floors oiled in this way need sweeping as often as unrolled floors, and this I believe is the cause for so much objection to them. The oil is not supposed to absorb the dirt and dust, but simply to hold onto it until it is swept.

It is the common practice in many of the smaller schools to have the drinking water supplied in a large bucket, into which the children are obliged to dip the common drinking cup or perhaps their own drinking cup in order to get a drink. This is very unsanitary in either case. The school should be supplied with a small water tank or reservoir that may be easily cleaned. From this, the water should be drawn by means of a faucet into the individual drinking cups of the children. We certainly should supply our children with a better method of getting a drink than that of the cheapest day laborer on the street!

It has not been the purpose in these few pages to cover the subject of school sanitation, but to give a few of the more common faults in the older schools, faults that are easily remedied if the proper attention be given them.

SCHOOL ARCHITECTURE.

WM. S. KAUFMAN, ARCHITECT, RICHMOND, IND. (See Figs 32, 33.)

The purpose of this article is to present to the school boards and trustees, in as concise form as possible, a general idea of the principles which apply, and the methods which are recognized as being of greatest importance in architecture, heating, and ventilating of school buildings. The aim is to present first the general principles which are recognized by the best authorities.

School buildings should possess merit in architecture. The lack of artistic excellence is all the more to be regretted on account of its influence upon the children. A very determined effort is being made to spread some rudimentary ideas of art among school children, not only to educate the brain powers, but to educate the eyes and hands.

Every building of enduring materials of the size of a school building affords scope for architectural effects, the disposition of the masses and the proportions of the expression, ample for securing an artistic result.

The great importance of heating and ventilating, how to distribute heat most evenly and economically, so as to give the best results and keep the air in the room always pure, are very important points. It is perfectly true, when a proper heating apparatus has been installed, that the warm fresh air supplied in any part of the room rises immediately to the ceiling, and as more is supplied fills the room from above downward with fresh air at a temperature which is probably 75 degrees at the ceiling and diminishes to 70 degrees at the level of the children's heads,

the mass working downward in the middle of the room, where it is not influenced by the chill of the walls and windows, at the rate of about four inches a minute.

The size of the inlets should be of the proper proportions to the dimensions of the room, and a free escape provided at the floor for foul air. A very important part is performed by the large window surface, which by cooling the air at the sides of the room produces a rapid circulation of all the air in the room.

The air shaft should be maintained at a temperature higher than that of the surrounding air, in which case the excess of pressure in a room will produce the required circulation.

These conditions should lead us to locate the vent shafts on the inside walls of the building, and where they will be kept as warm as possible by the surrounding bodies. By such an arrangement the proper amount of ventilation can be secured. If for any reason the temperature of the flues becomes lower than that of surrounding air, the current will move in a reverse direction. It is a very common occurrence to find ventilating flues in school buildings where no provisions are made for heating the same. In such cases the flues ventilate the wrong way, and become conduits for the influx of cold air.

The most abundant of all things is the air that we breathe, and why should there be any hesitation on the part of trustees and school boards in attaining the best results possible by securing pure air?

Schoolrooms are usually overcrowded, and probably the cause of a vast amount of ill-health and premature death, although the results are usually not so direct and immediate that they can be clearly traced to this source. Every intelligent teacher knows that dullness and listlessness in some pupils and irritability in others, which are so manifested toward the close of the afternoon session, are the results of gradual accumulation of foul air or carbonic acid gas which has been gathering throughout the day. It is just as reasonable to use ashes for fuel and expect to keep warm as it is to pass the same air through the lungs the second or third time and expect to have good health. We can only think that it is the lack of appreciation on the part of the school boards and trustees of the results that naturally follow this important but greatly neglected question of heating and ventilating. When we stop to think of how few country and village school buildings in this State have any provision whatever made for ventilating the same, it seems there should be some method devised to bring about a change in the existing state of affairs.

All new buildings should be constructed with a proper system of heating and ventilating, and all old buildings should be revised and have a system installed that would meet with modern ideas. This could be done at a very small cost.

Recent tests have been made to ascertain the difference in the temperature, with the following results: Of analyses made at different times, the temperature at the floor was 34 degrees; at a point five feet above the floor, 68 degrees, thus showing a difference of 34 degrees. The outside temperature was zero when these tests were made. This indicates that it is utterly impossible to get evenly heated rooms where no means are provided for admitting air, except through doors and windows. The

colder the weather, the more difference there is in the temperature of the rooms at different heights from the floor. A room may be considered evenly heated when there is less than 8 degrees difference in the temperature between the floor and a point five feet above the floor in weather 10 degrees Fahr. This can be obtained by using a good schoolroom heater of ample size, with proper ventilating duct, when the building is properly constructed for same. A schoolroom heater should not be used in a building of more than two or three rooms. The expense of installing a furnace is usually too great for heating a building of one room. Buildings of more than three rooms, and all two-story buildings, should be heated by a furnace or a system of indirect steam or hot water heating.

It is well known to sanitarians that the amount of fresh air required by a person or an assembly can be estimated by the amount of carbonic acid given out, and the amount required to dilute this to a degree assumed as a normal standard of purity for schoolrooms. Now, the mean composition of outdoor air is nitrogen 79 per cent., oxygen 20.96 per cent., carbonic acid gas .04 per cent. As we breathe, we use up the oxygen and supply the noxious carbonic acid in its place. We may therefore estimate the wholesomeness of the air by ascertaining the amount of carbonic acid gas contained. The amount of carbonic acid gas allowable in breathing air is variously estimated. Different authorities estimate from 8 to 10 parts to one ten-thousandths as the maximum for safety. The best authorities concede that it is necessary to introduce 2,100 cubic feet per hour for each pupil as the minimum quantity of fresh air to be supplied. In the best arranged ventilating shafts, properly heated for promoting the draught, the upward current will occasionally reach the velocity of 17 feet per second in cold weather, although the average is rarely more than eight feet, so that a room containing forty pupils should have an outlet shaft of two feet six inches, or more, in sectional area to be capable of proper ventilation. Proper ventilation is impossible unless the buildings are so constructed as to permit of the best systems being carried out. Many of the finest buildings, such as schoolhouses, churches, theaters, Y. M. C. A. buildings, etc., are entirely inadequate in regard to heating and ventilating, and may be considered merely as nice-appearing buildings. School buildings are generally built grudgingly by taxpayers, who have no thought of more being necessary than foundation, walls, floors and roof.

For a one-room country schoolhouse the maximum number of pupils that should be allowed is fifty. In a schoolhouse of more than one room not more than forty pupils to a room should be allowed. Every schoolhouse lot should contain at least 10,000 square feet, and every pupil should have at least fifteen square feet of floor area in the classrooms. The height of the room should not be less than thirteen feet.

The lighting of school buildings is just as necessary as the heating and ventilating, although there is not so much deficiency in lighting as there is in heating and ventilating. Properly lighted schoolrooms are classified thus:

First. Light should be admitted from the left of the pupil, provided the room is not to exceed twenty to twenty-five feet in width.

Second. The light should be admitted from the rear and left of the pupils; the strongest light from the left.

Third. The light should be admitted from both sides, but strongest must come from the left. In case the room is lighted from one side only, the window head should extend to the ceiling line in order to throw the light as far as possible into the room. The window sills should be cut on a slope on the inside.

In this country, where we have considerable cloudy weather, it is better to err on the side of too much than too little light.

Authorities differ somewhat as to the amount of glass area for proper lighting. We are inclined to believe that in lighting a room there is a direct relation between the area of the aperture admitting the light and the cubic space to be lighted—that is, to take the square root of the cubic contents of the room for the glass area.

The subject of lighting is beset with numerous difficulties, which, to overcome, in some instances, require a thorough knowledge of the subject.

We wish to make a few suggestions in regard to the ideas of a modern school building.

The site for a school building ought to be central, airy and easy of access, removed from every noisy, unhealthy, or dangerous establishment, and at least seventy-five feet from the street. The building should be elevated. If the soil is not quite free from moisture, it should be drained. The yard should be properly graded in order to carry off all falling water. The building should have a basement eight feet high, a stone foundation furnished with a water-table. In a country schoolhouse a basement is unnecessary. The foundation of same should be two feet six inches above the grade line, and three feet six inches when basement is desired.

The superstructure should be built of brick and have a slate roof, laid on solid sheathing and water-proof paper. Every schoolhouse should have a vestibule, with double doors on the outside and fly or spring doors on the inside. The corridors should be wide, spacious, and well lighted and not too long. In a two-story building the stairway should be wide and easy, with treads twelve inches wide and risers six inches high. The schoolroom should be twenty-five feet by thirty feet. All rooms, halls, cloakrooms, and stairs, should be wainscoted four feet high. Lighted as hereinbefore stated. Each room should have a slate blackboard.

Large ventilating shaft, hot-air flues, and fresh-air room are indispensable. The floors should be of poplar or edge-grain Southern pine. All floors should be deafened. Each schoolroom should be provided with a closet. All rooms should be heated with the indirect system of heating, either furnace, hot water or steam. Ample provisions should be made for ventilating, in order to change the air in the rooms at least four times per hour.

In a country schoolhouse use a ventilating stove, large size, for heating. The foul-air exits should be placed at the floor line. There should be not less than four in number, located under the windows. The floor should be constructed so as to permit the foul air to come in contact with it, on the under side; by so doing, the floor is kept warm and the children's feet are always comfortable, and it does not require so much fuel to heat the rooms. At the expiration of the term the fuel bill will be considerably reduced. The fresh-air chamber should be of ample size and properly connected with the heating apparatus. The amount of fresh air should be controlled by a valve.

In designing a school building, the style of architecture should be entirely utilitarian and should be treated to express the purpose of the building by imparting to it the aspect of a school building. This should be at once apparent to all. The design should be simple, having a good general sky line, which should be a direct outcome of the plan. A complete building is the stepping-stone to a complete education, and instruction can not be properly or healthfully directed without it. The utmost that can be done is to provide surroundings favorable for the best physical and mental development.

THE SMALL SCHOOL BUILDING.

LOUIS H. GIBSON, ARCHITECT, INDIANAPOLIS. (See Figs. 10-20.)

The small school building involves an amount of thought and attention altogether disproportionate to its size. It is relatively an easier problem to build a large school building, say of eight or twelve rooms, than a small building. It is probable that as much effort has been directed to the proper planning of a one-room house as any other type of school building.

It is a fact, however, that all schoolhouses may be improved without making corresponding additions in their cost. Now, it is a fact that most school buildings are ugly, that few are well planned and the majority are badly constructed. The plans presented in this connection (see Figs. Nos. 10 to 20) are the result of research and the application of the newest thought relating to school buildings. The principle of ventilation and lighting has been set forth in another article, and applies alike to a building of any size, excepting, for apparent reasons, that complicated systems of heating, involving the use of fans and blowers, can not be thought of in connection with a very small structure.

The lighting of the one-story building is performed exactly in the same way as in the larger structures (see Fig. No. 16); that is, entirely from one side. The windows are glazed with ribbed glass, excepting a small part of the lower sash; and thus the light is uniformly diffused throughout the room. As elsewhere stated, the use of ribbed glass makes it entirely possible to light from one side. The prismatic quality of the ribbed glass affords a complete and general distribution, so that one part of the room is as light as another. The corrugations should run horizontally for all cases excepting the opening at each end. In these windows the ribs should run vertically and thus cast the light into the corners at each end on the window side.

The plans indicated in Figs. Nos. 10 to 20 are for frame buildings, and do not require especial explanation. The foundation should be of hard brick with ventilating grates in the outside wall. No cellar is contemplated. The frames should be of 2x6-inch studding and should be covered on the outside, first, with close sheathing nailed on diagonally, then with heavy building paper, and this finally with six-inch shiplap or drop siding seven-eighths inch in thickness. The roof is of shingles. The plaster finish should be a smooth gray coating and no wainscoting should be provided. There is no advantage in wainscoting, but on the other hand, there

are several disadvantages. The chalk rail, picture molding and a narrow base should be provided for the walls. The most satisfactory method of treating walls is to paint them. The painting may be a light yellow and the walls of a porous, earthen color, which has been found to receive light in even a better way than white, and is certainly much more restful to the eyes.

The two elements wherein the pupils in a one-room schoolhouse will suffer as compared with those in the larger structure are in the ventilation and water closet arrangements. I asked a gentleman connected with the school system of the State whose duties require him to travel in all sections if he knew of any satisfactory solution of the outhouse problem for the small schools of the country. He said: "Absolutely none. None exists. In case of their being in the yard they simply descend to the level of the out-of-door privy and at best are foul." The dry closet system is too expensive for a small structure and at best its efficacy is questionable. Theoretically, the earth closet is a fair solution. Practically, time and experience have not justified its extensive introduction. I have in mind a one-room plan with an enclosed porch in front, a vestibule on each side of the porch and a closet opening out from each vestibule. It is the intent of this plan that these rooms be well ventilated by natural means and that the efflu be received in boxes and taken away every day through an opening in the outside of the building. In continental countries where service is efficient as well as cheap, one sees closets of this kind in first-class structures—in hotels and buildings which are pretentious. The efficiency of such an arrangement is dependent, of course, upon the care which it receives.

There are many ways of warming and ventilating a one-room building. One, of course, is by a hot air furnace placed in the basement and liberally supplied with air. A large flue connects it with the room. The heat of the smokepipe can be used to accelerate the movement of air in a vent stack and thus measurably ventilate the room with which it connects. This, of course, involves a basement. This work can be done without a basement by placing the furnace on the first floor as indicated on the drawings which are submitted herewith (see Fig. No. 14).

A bricked-in or jacketed stove, wherein outside air shall be carried into the jacket, heated and passed out through the top, is a primitive and effective arrangement. The heat from the pipe of this stove can be utilized the same as before to heat the ventilating stack.

The question of ventilation is an old one. All have had a certain ambition to breathe pure air, but it is only within recent years that definite accomplishment has been made in that direction in rooms where a large number of people were gathered. Hundreds of thousands of dollars have been wasted in this State in defective apparatus and without any definite knowledge as to the results obtained. Pure air for schoolrooms is a purchasable quantity. One can buy a certain number of feet of pure warmed air for a fixed price with the same certainty of getting what he pays for as he would in the purchase of a more material substance. The engineer, the chemist and the physician have joined hands and we are now able to buy pure air in the same business-like way that we would buy brick or lumber.

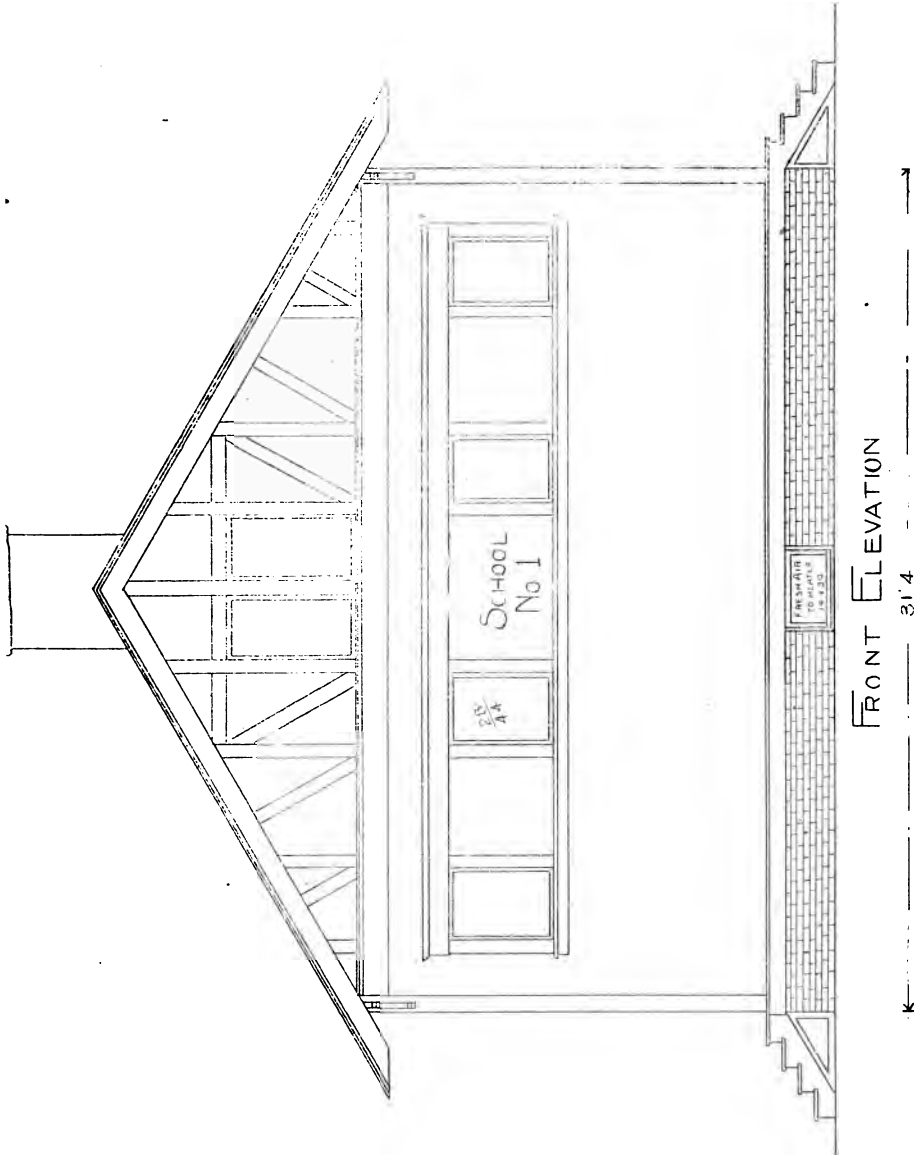
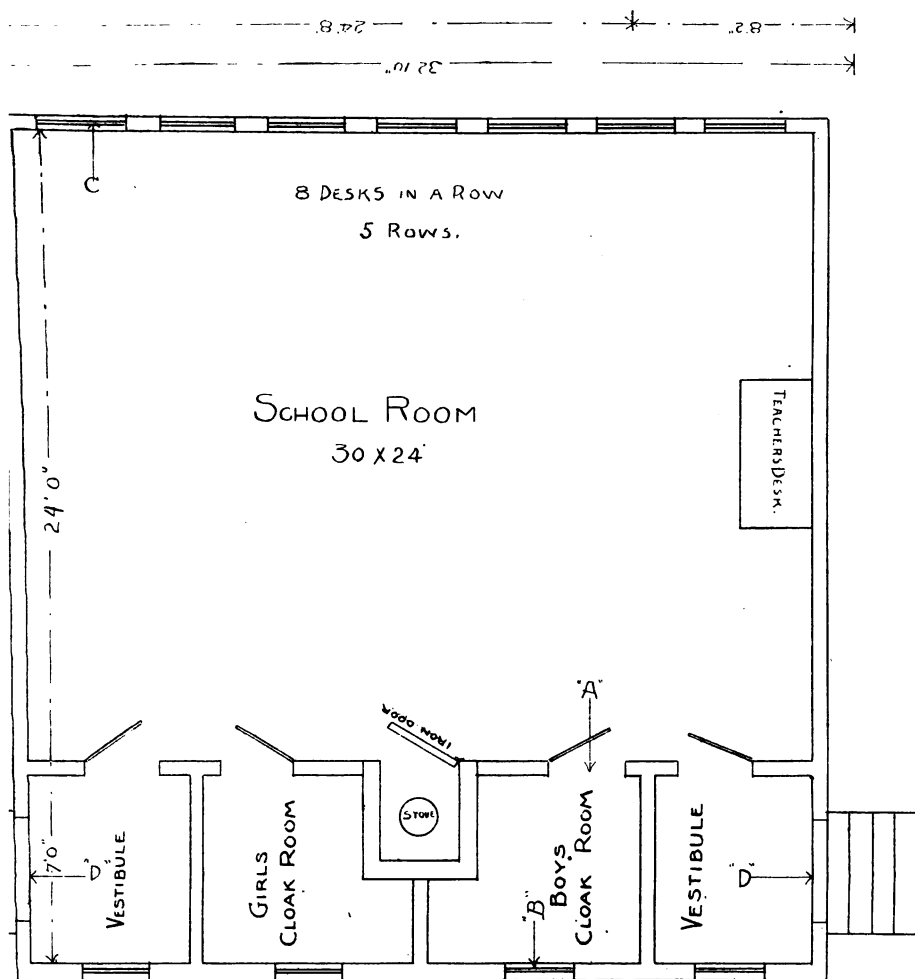


Fig. 10.

RURAL SCHOOL IN OWEN COUNTY, INDIANA. PLANS BY LOUIS H. GIBSON, INDIANAPOLIS, IND.

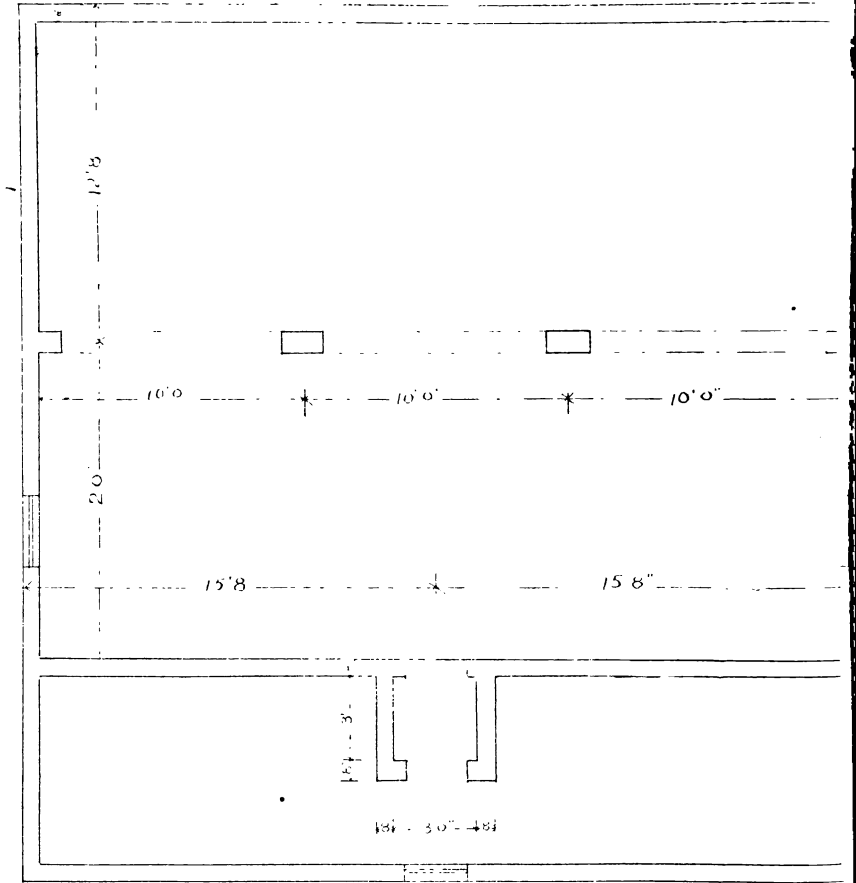


GROUND FLOOR

SCALE $\frac{1}{4}'' = 1'$

Fig. 12.

RURAL SCHOOL, OWEN COUNTY.



FOUNDATION PLAN

31'1"

Fig. 13.

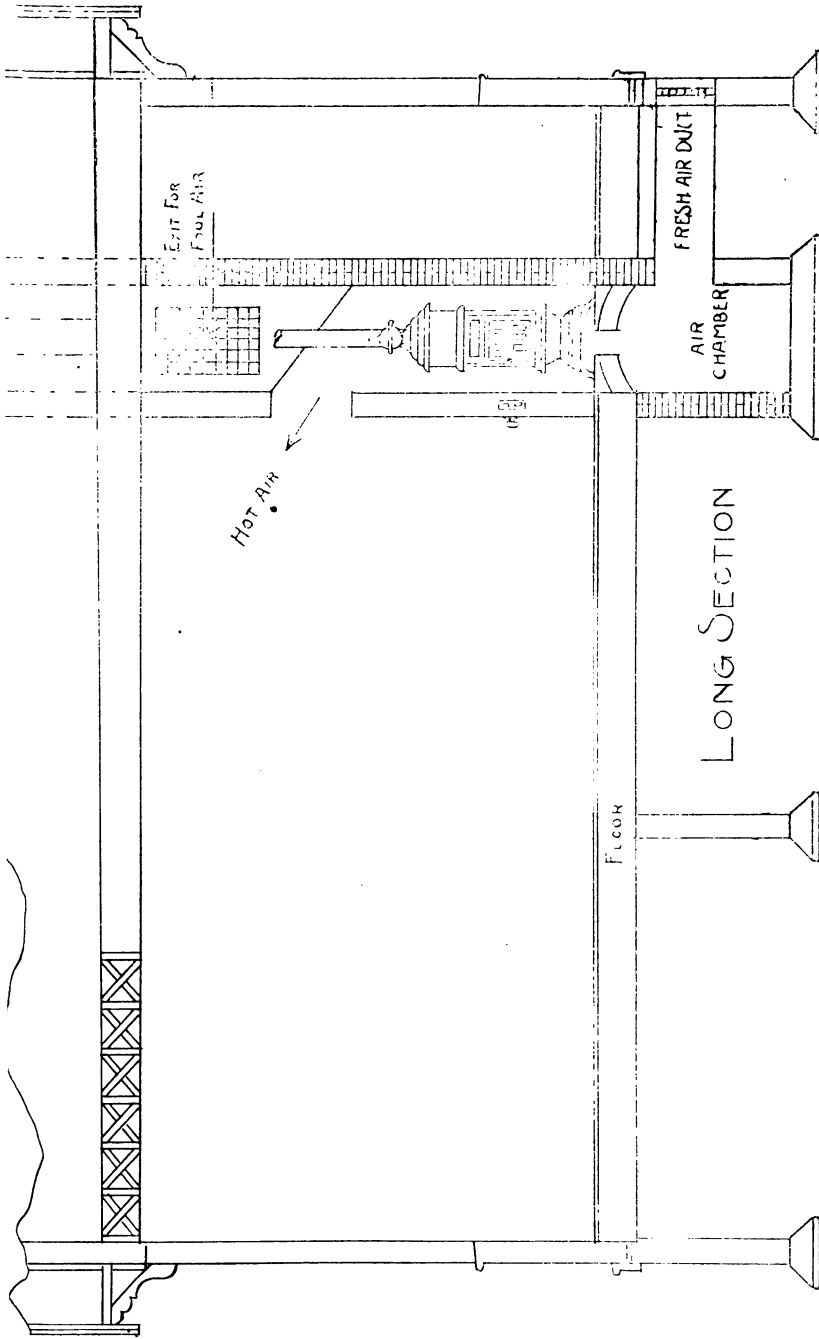
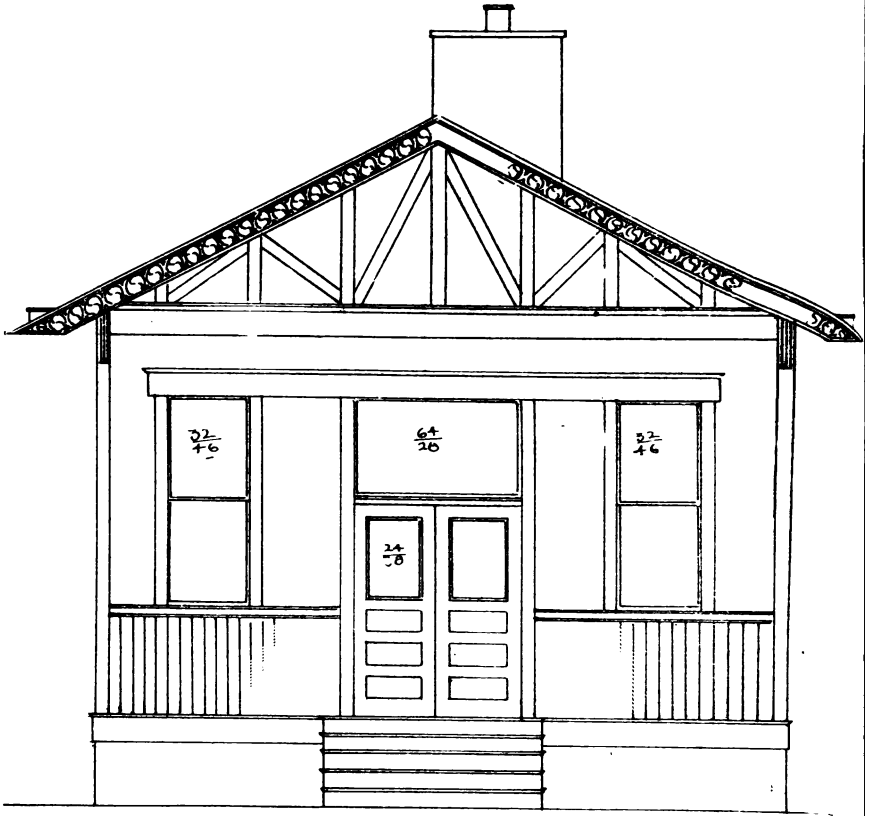


Fig. 14.

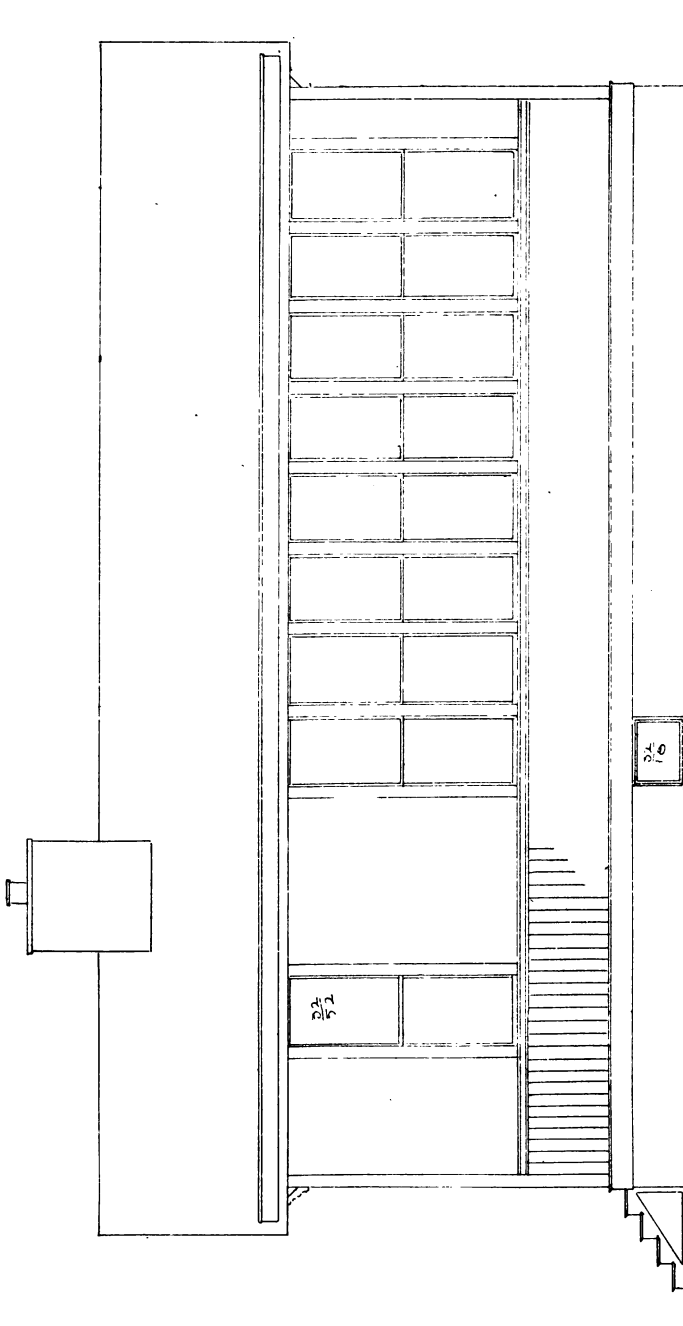
HEATING PLAN, RURAL SCHOOL, OWEN COUNTY.



FRONT ELEVATION.

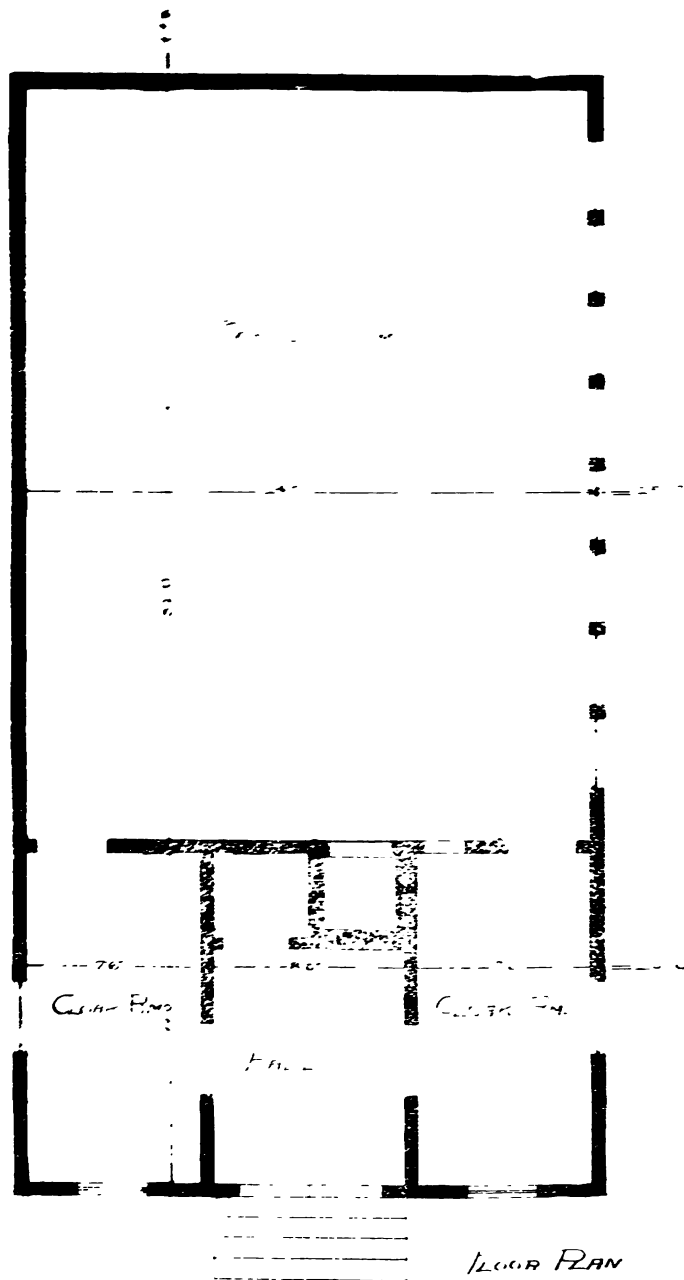
Fig. 15.

RURAL SCHOOL LOUIS H. GIBSON, ARCHITECT.



SIDE ELEVATION.

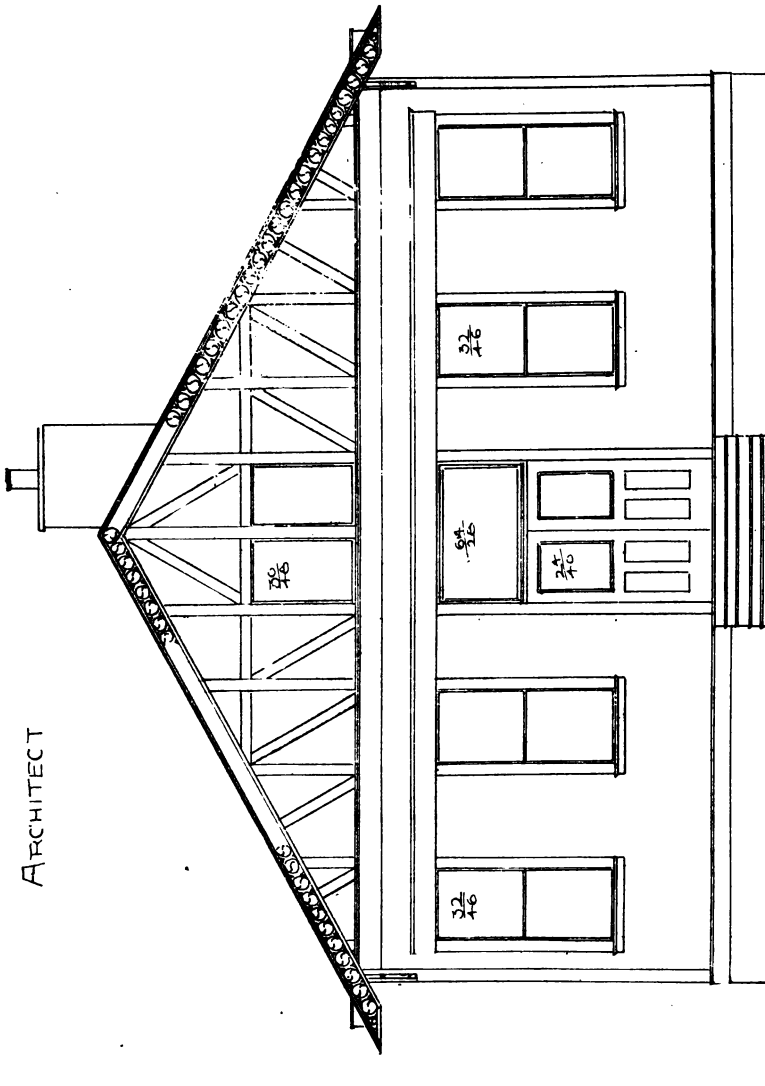
Fig. 16.



U. S. 14/1

Fig. 17.
RURAL SCHOOL. LOUIS H. GIBSON, ARCHITECT.

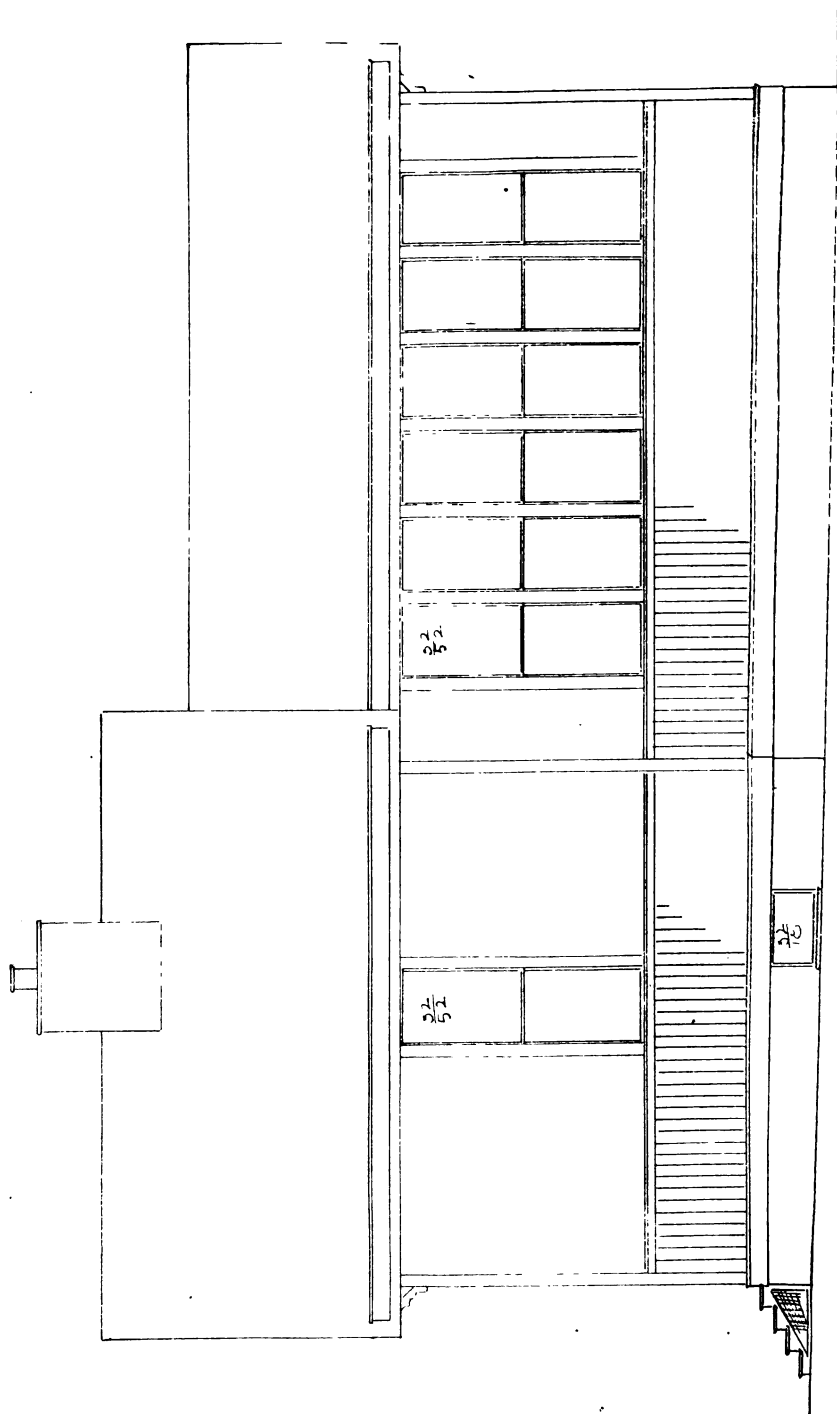
LEWIS H GIBSON,
ARCHITECT



FRONT ELEVATION.

Fig. 18.

RURAL SCHOOL.



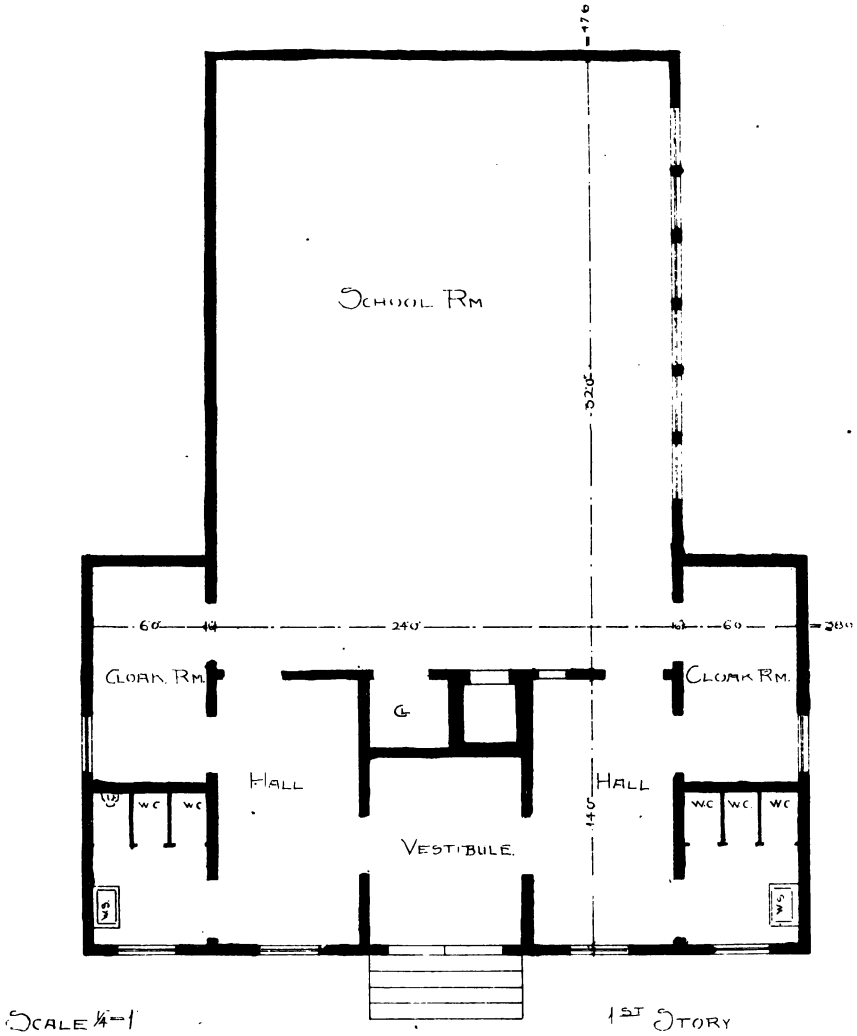
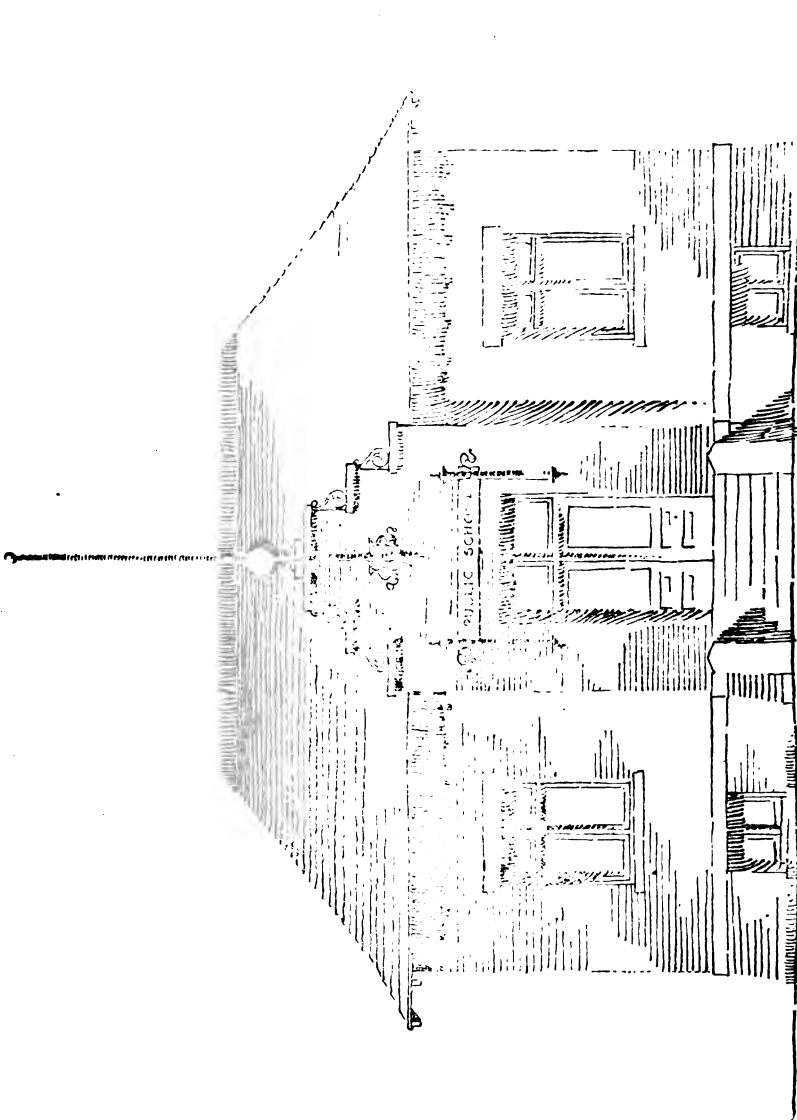


Fig. 20.



Vernadut & Bohm,
Architects, Indianapolis

~ FRONT ELEVATION ~

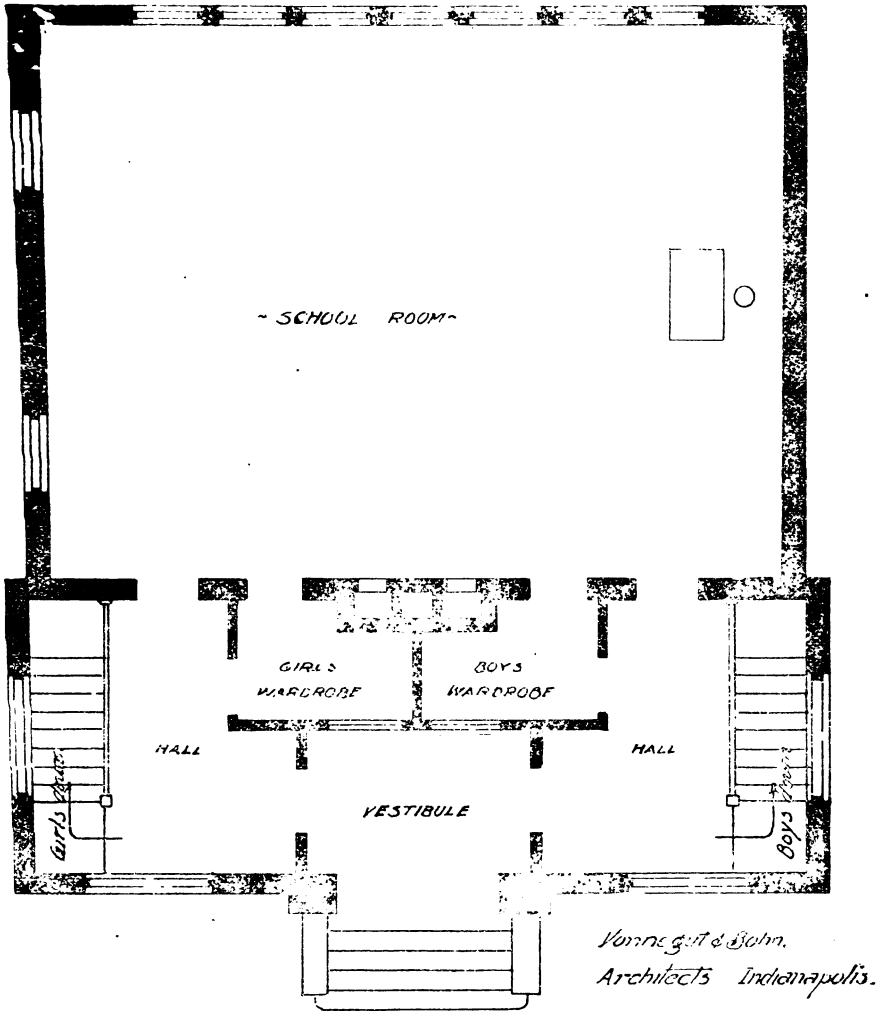
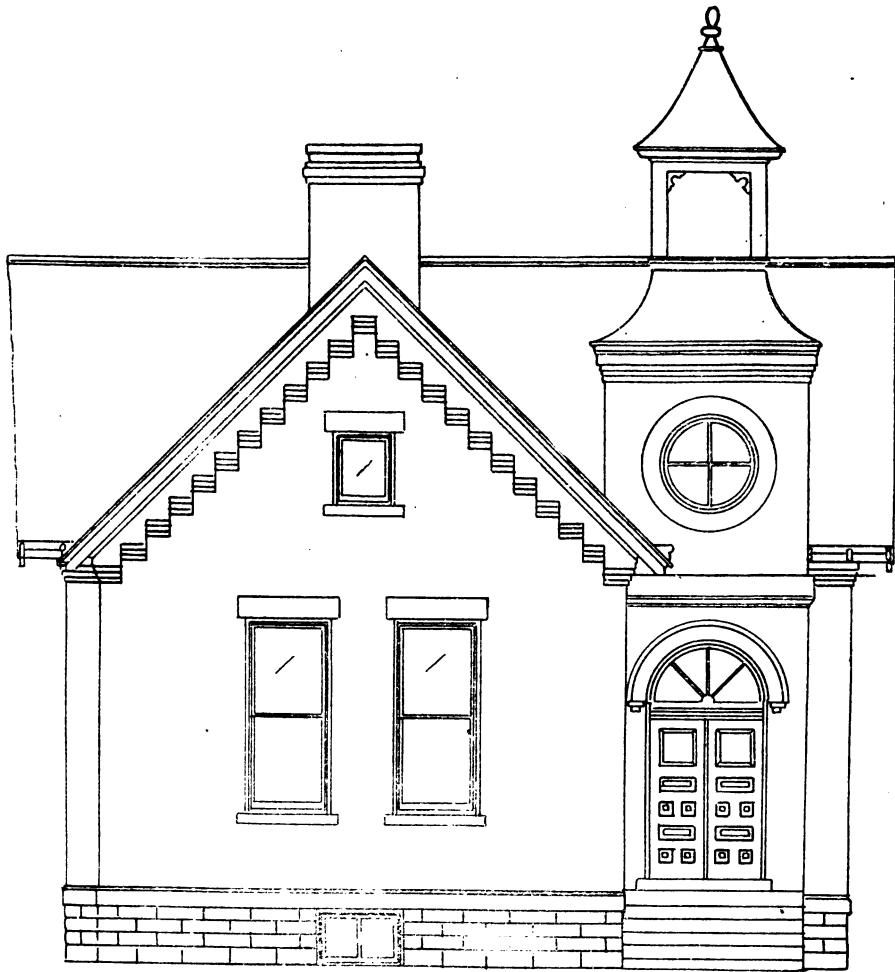


Fig. 22.
RURAL SCHOOL.

Figures 23 and 24 are the floor plan and front elevation respectively of a district school building. This building is intended to be heated by means of a furnace in the basement, and is provided with the system of direct-indirect ventilation. The location of windows avoids cross-lights and gives light to the pupils over the left shoulder and from the rear. The cloakroom is well lighted, ventilated and warmed, and is also situated so that it is convenient to both teacher and pupil. The entrance is near the teacher and the vestibule protects the children from sudden cold by the opening of an outside door. There is ample blackboard space. The windows are grouped so that the light comes into the room in masses and with but little obstruction. The plans and specifications provide that the heating and ventilation will be by the best modern methods, such as are used in larger buildings, and yet the work is done economically. The building will cost from \$1,500 to \$1,800, according to locality. This design is copyrighted.



Front Elevation

R. D. Mohler, Arch't.
Huntington Ind.

Fig. 23.

RURAL SCHOOL.

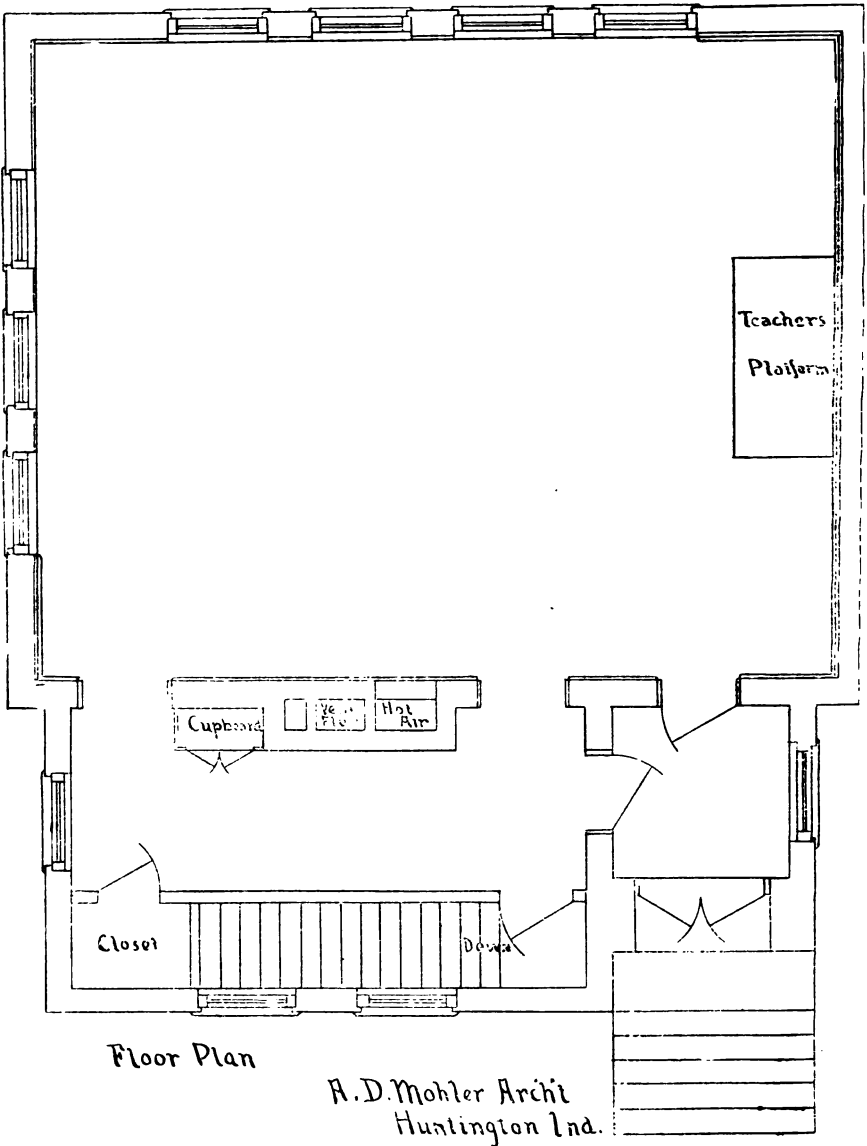
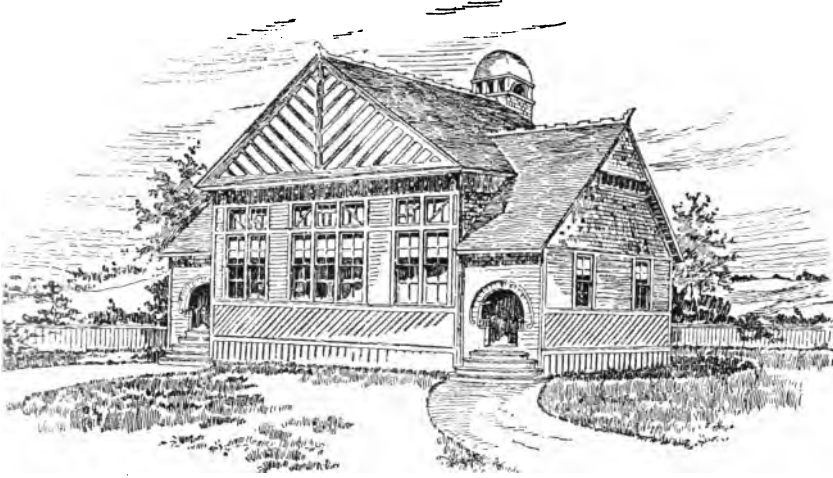


Fig. 21.



PERSPECTIVE

C. Powell Kart. Des. Stewart Bldg. New York City

ESTIMATED COST \$1200

Fig. 25.

RURAL SCHOOL—SANITARY, ATTRACTIVE AND ECONOMICAL.

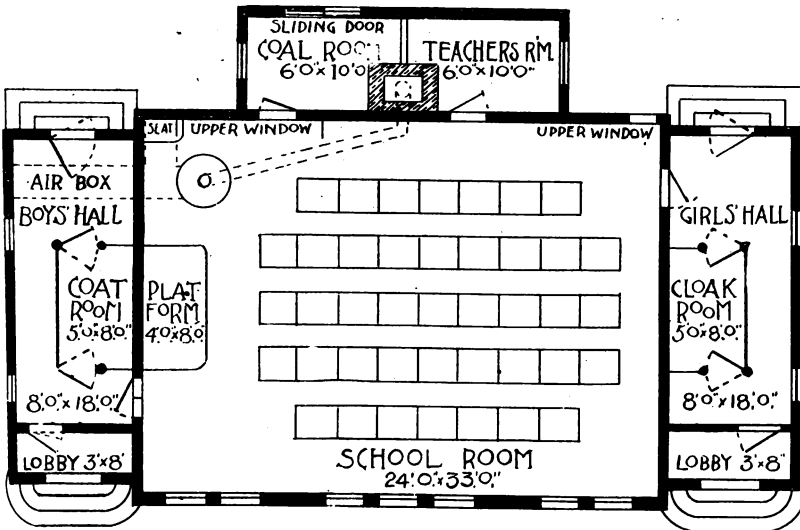


Fig. 26.

Figures 27, 28, 29 show the elevations and floor plans of school No. 5, Delaware Township, Delaware County, Indiana. This building is modern in every respect, having the windows grouped on the north side, rear windows very small and five feet from the floor. All windows extend to the ceiling.

The heating is by a furnace of the Kruse & Dewenter make. The cost of the building was \$950, and of the heating plant \$150. Total, \$1,100. On the whole this is one of the most satisfactory buildings in the State.

Figures 30 and 31 represent a good building in every respect except the lighting. By grouping the windows on one side of the room more satisfactory results would be had.



Fig. 27.

RURAL SCHOOL, DELAWARE COUNTY. COST OF BUILDING AND HEATER, \$1,100.



Fig. 28.

PEASE DISSEMINATION, RURAL SCHOOL, DELAWARE COUNTY. COST OF BUILDING AND HEATING, \$1,100.

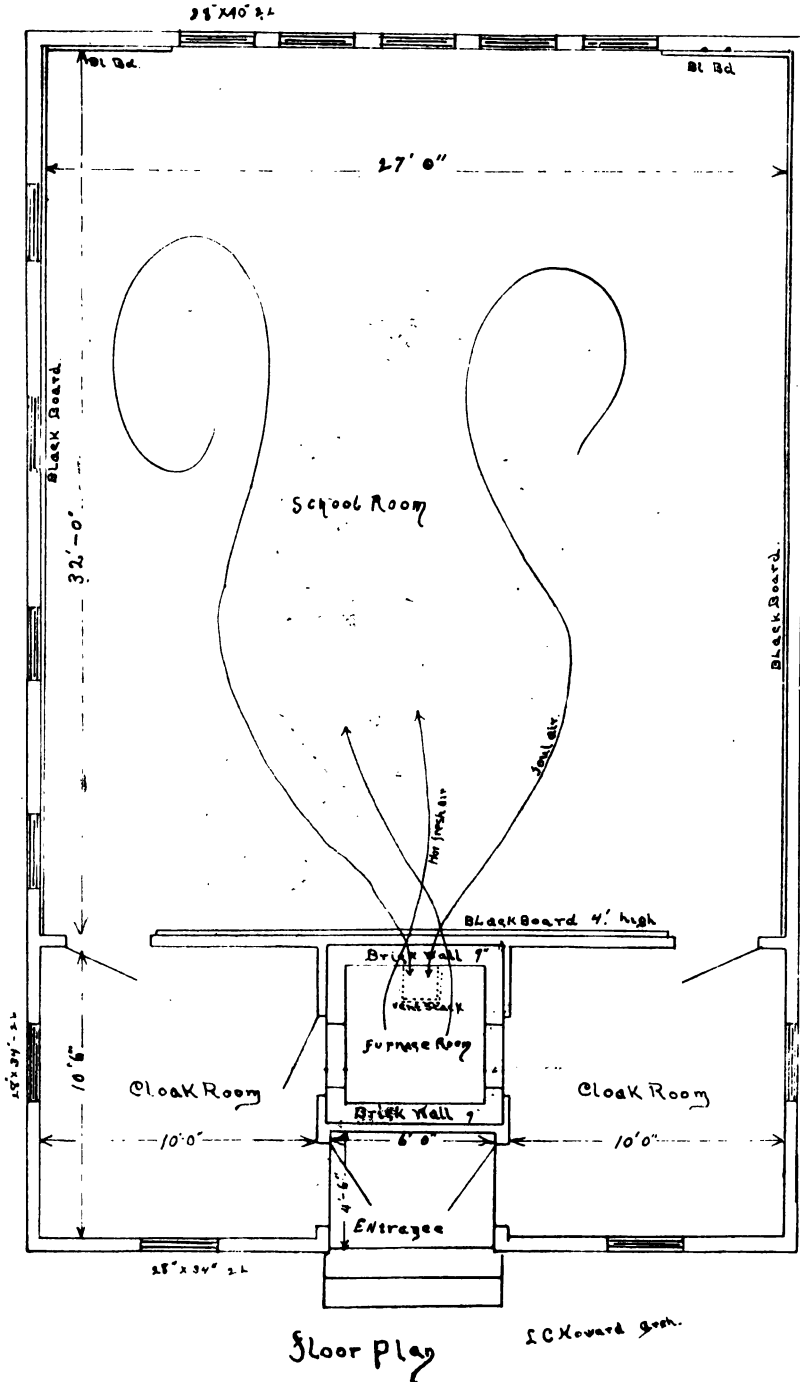
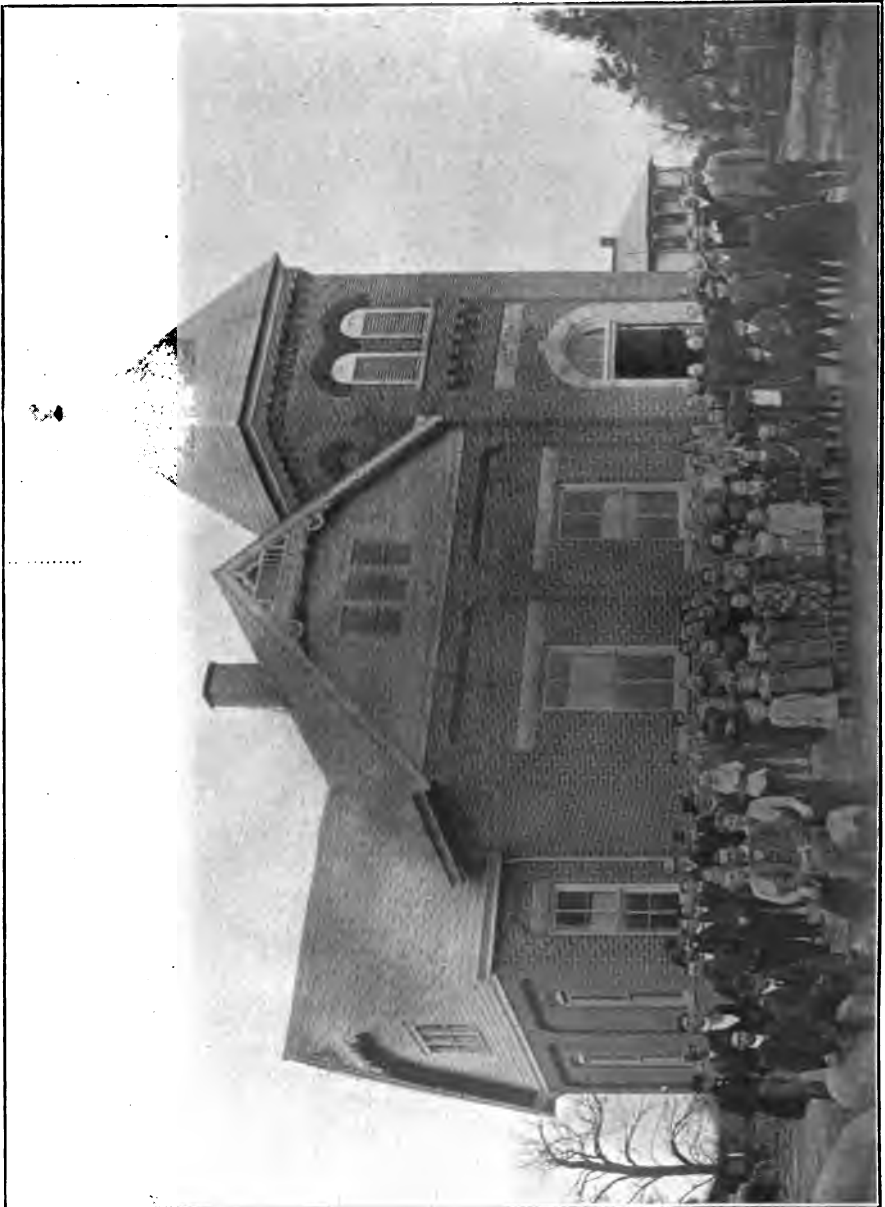
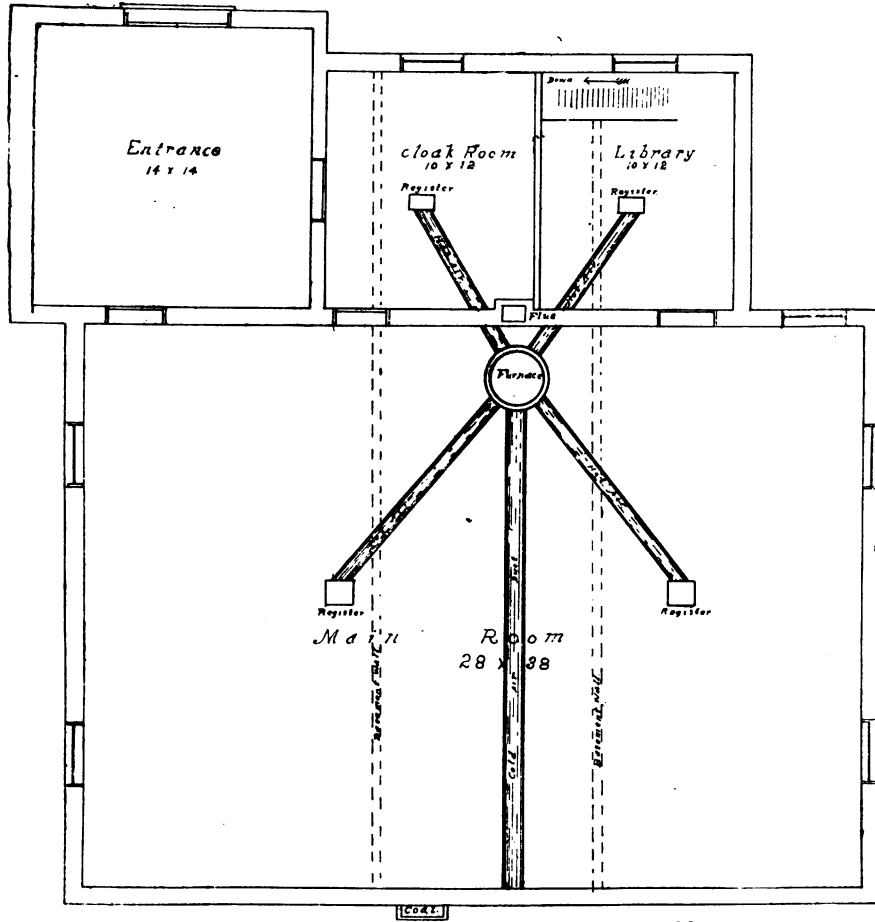


Fig. 29.

RURAL SCHOOL, DELAWARE COUNTY. (See Figs. 27 and 28.)



Page 30.



J.S. Shannon
Noblesville
Indiana

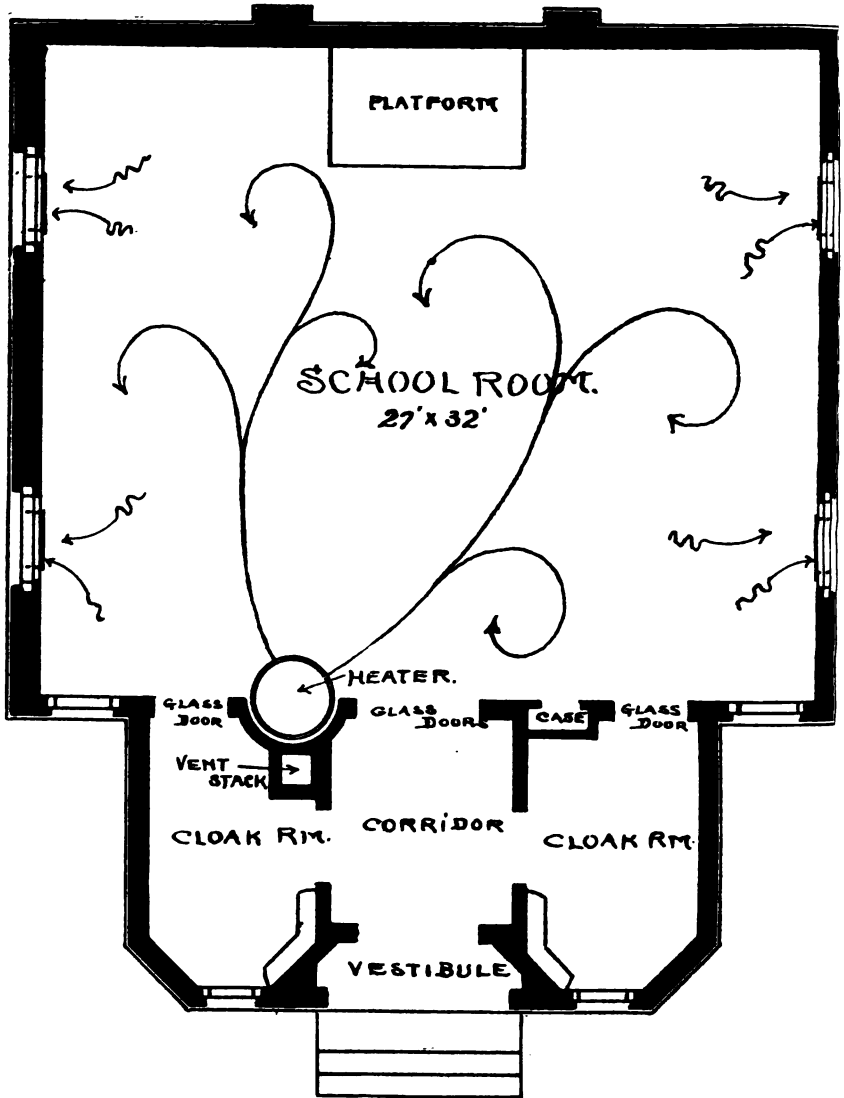
Fig. 31.

Figures 32 and 33 show District School Building No. 12, Wayne Township, Wayne County, Ind. This building embodies all the points recognized as the best adapted for district school buildings, the principal ones of which are heating and ventilation. The design of this building is a departure from the stereotyped style of district buildings so common throughout the State, and fully meets the requirements for an artistic district building at a minimum cost. The very best results have been obtained that are possible with the gravity system of heating and ventilation. The heater is placed in a niche located in the wall between the cloakroom and schoolroom. The pure air is taken from outside the building into a fresh air chamber, located beneath the floor of the schoolroom; from thence it passes through a duct to and through the heater; the heated air is thrown out from the top of the heater, thence diffused throughout the room. The amount of air admitted into the room by this method will change the air in the entire schoolroom from four to five times every hour. The amount of fresh air entering the fresh air chamber is controlled by a valve, operated from the schoolroom. The vitiated air is drawn from the schoolroom through four registers 6 inches by 18 inches in size, placed under the windows at the floor line; thence passing between the floor and the surface of the ground to the vent shaft, 18 inches by 21 inches in size, located adjoining the smoke flue, with an iron partition dividing the smoke flue and the vent shaft, located just above the point where the smoke pipe from the heater enters the smoke flue. This iron plate becoming heated by the smoke from the heater creates an upward draft in the vent shaft sufficient to draw the foul air from beneath the floor, and thus changing the air in the room from four to five times per hour. By this method the floor of the schoolroom is warmed by the air passing beneath it to a temperature of approximately 60 degrees. The area of the windows is equivalent to about one-sixth of the floor space, which affords excellent lighting. The lighting would be better if the windows were grouped on one side of the room or on two sides at right angles.



Fig. 32.

RURAL SCHOOL, WAYNE COUNTY.



FLOOR PLAN.

DISTRICT SCHOOL NO. 12, WAYNE TOWNSHIP,
WAYNE CO., IND.

W. S. Kaufman, Arch't. Richmond, Ind.

Figures 34 and 35 represent a schoolhouse located in District No. 4, Pleasant Township, Steuben County, and designed and built by Ezra L. Dodge, Trustee, in 1898. The foundation is of native field stone and the superstructure is of eight-inch thick terra cotta building block, the inside being studded and sheeted with sheeting boards, two inches from the terra cotta, making a hollow wall from the floor to the attic. It is lathed and plastered on the inside, making a perfectly warm and sanitary wall. The main building is 27 by 37 feet inside and faces north, the light being admitted through large windows. There are no windows in the south, but a talc blackboard the entire 37 feet. At the windows are curtains which can be raised or lowered from the top or bottom. There should be a better grouping of windows. The house is heated by a brick-set Smead furnace, located in the basement, where the fuel is stored, also. Fresh air is piped from an outside basement window direct to the furnace, which sends it into the schoolroom heated. The chimney is double and contains both smoke and ventilating shaft, with capacity sufficient to change the air in the room every seven minutes. There is a hall leading to the main schoolroom, on either side of which are cloakrooms and sink, with drain, making it convenient for the children to wash and comb when desirable before passing into the schoolroom. There is also a stairway leading from the hall to the basement. The seating capacity is 60.



Fig. 31.

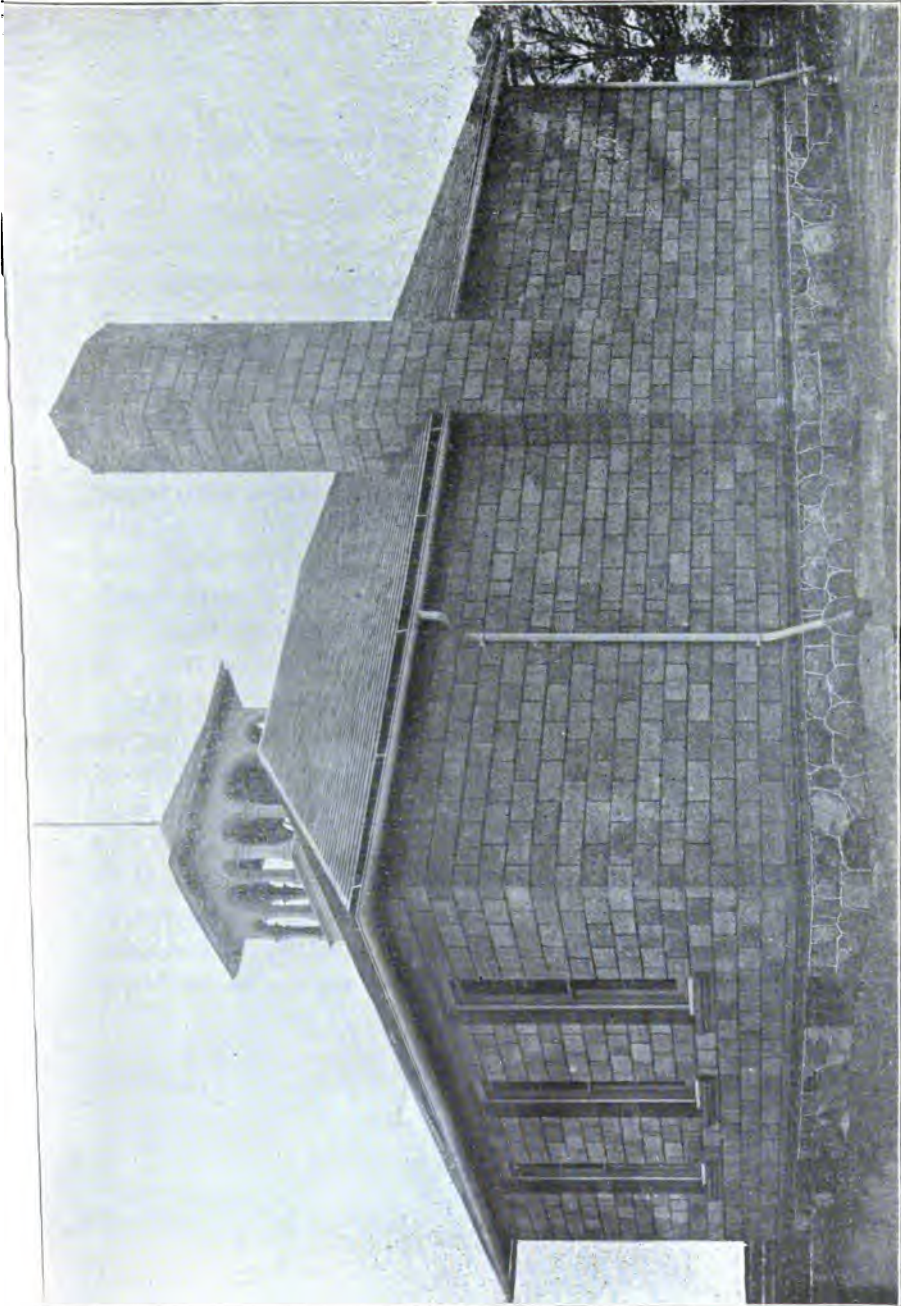


Fig. 35.

REAR VIEW, RURAL SCHOOL, STEUBEN COUNTY.

The subject of Figures 36 and 37 is District School Building No. 5, Washington Township, Porter County, Ind. Our views show an interesting interior and exterior, having a wide entrance at one end opening into a spacious hall. The windows are large and so arranged as to have the light enter the room from left side and rear of scholars.

The foundation is made of limestone, laid in cement mortar, even courses above grade. Exterior frame work from foundation to roof made of 2 by 6-inch studding, sheathed on outside with No. 2 flooring, then covered with heavy building paper, then covered with square edge siding and painted a light gray; entrance and hall laid with hard wood floors, large swinging doors to schoolroom and basement; stairs to basement, ladder to attic and shelves for books and maps. All floors are of ash, doors and casings of yellow pine, finished in hard oil. The ceilings and side walls in hall are covered with pressed steel, tinted, the side walls of schoolroom are plastered with acme cement, tinted to match ceiling. The entire basement floor is made of cement concrete dressed to a smooth surface, making an excellent playroom for children at the noon hour in stormy weather. A driven well with iron pump is located in basement, with proper drainage for waste water. The furnace is located under center of schoolroom with one direct register, the vents being so arranged as to cause the air to pass from the room near the floor, allowing the warm air to pass down and out at all corners and sides of schoolroom. The building is 28 by 38 feet outside, has wood cornice and pine shingle roof; was planned by and built under the supervision of Architect Chas. F. Lembke, 28 N. Morgan Street, Valparaiso, Ind., for Trustee W. A. Bond, and cost \$2,636. Working plans and specifications can be secured of the architect.



Fig. 36.
RURAL SCHOOL, PORTER COUNTY.

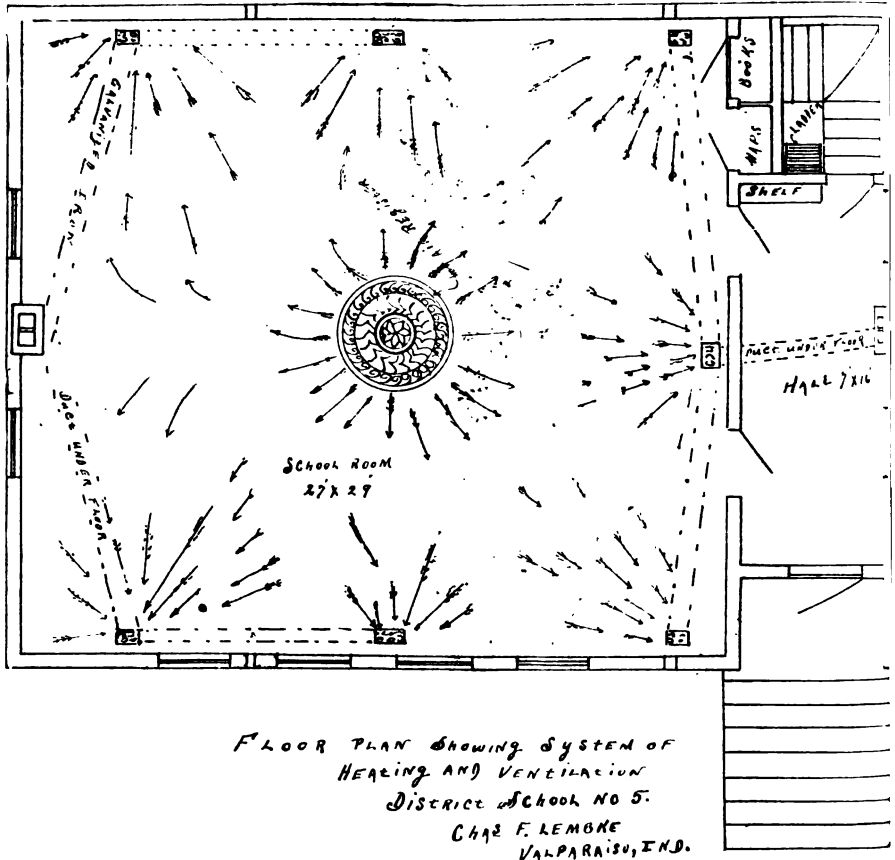
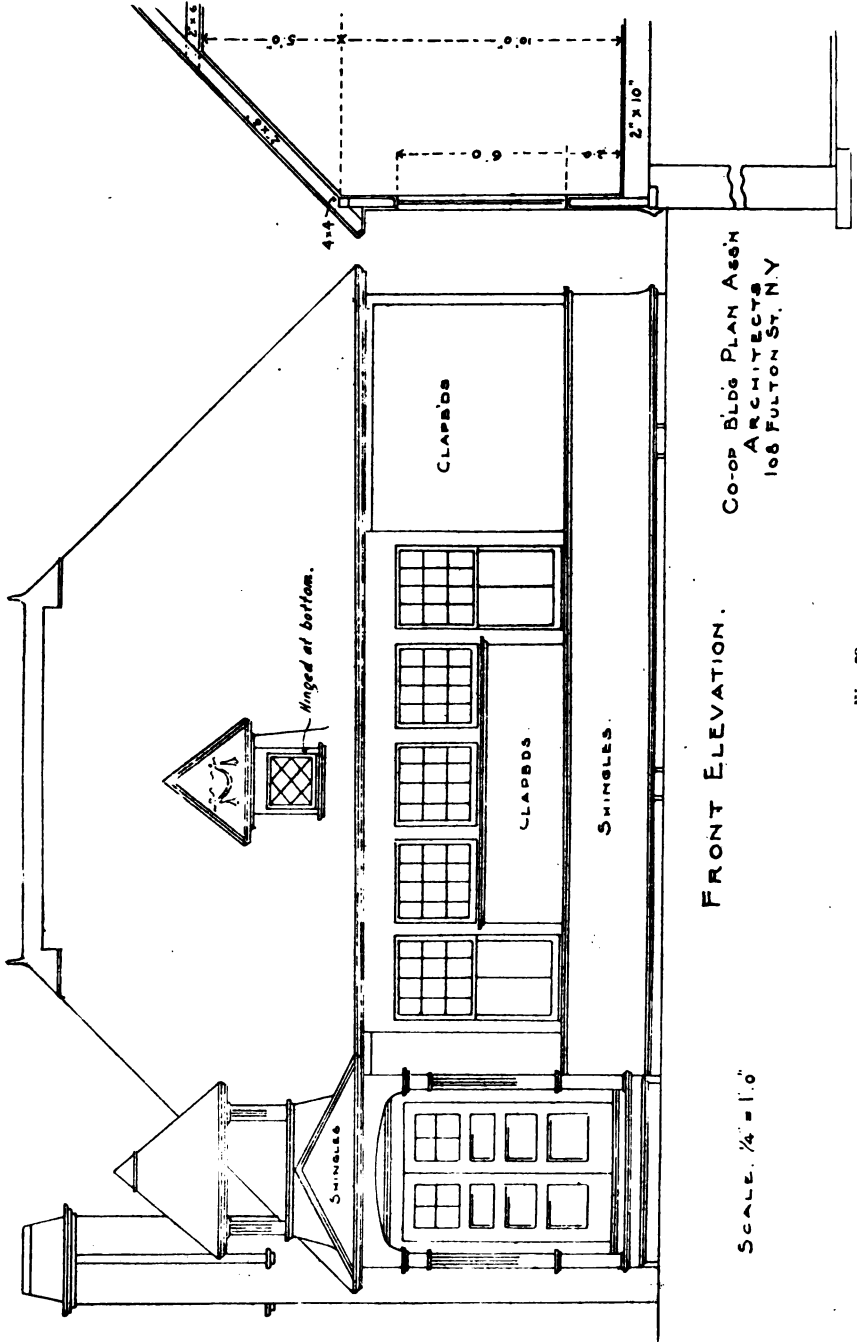


Fig. 37.



Fig. 38.

RURAL SCHOOL, PORTER COUNTY



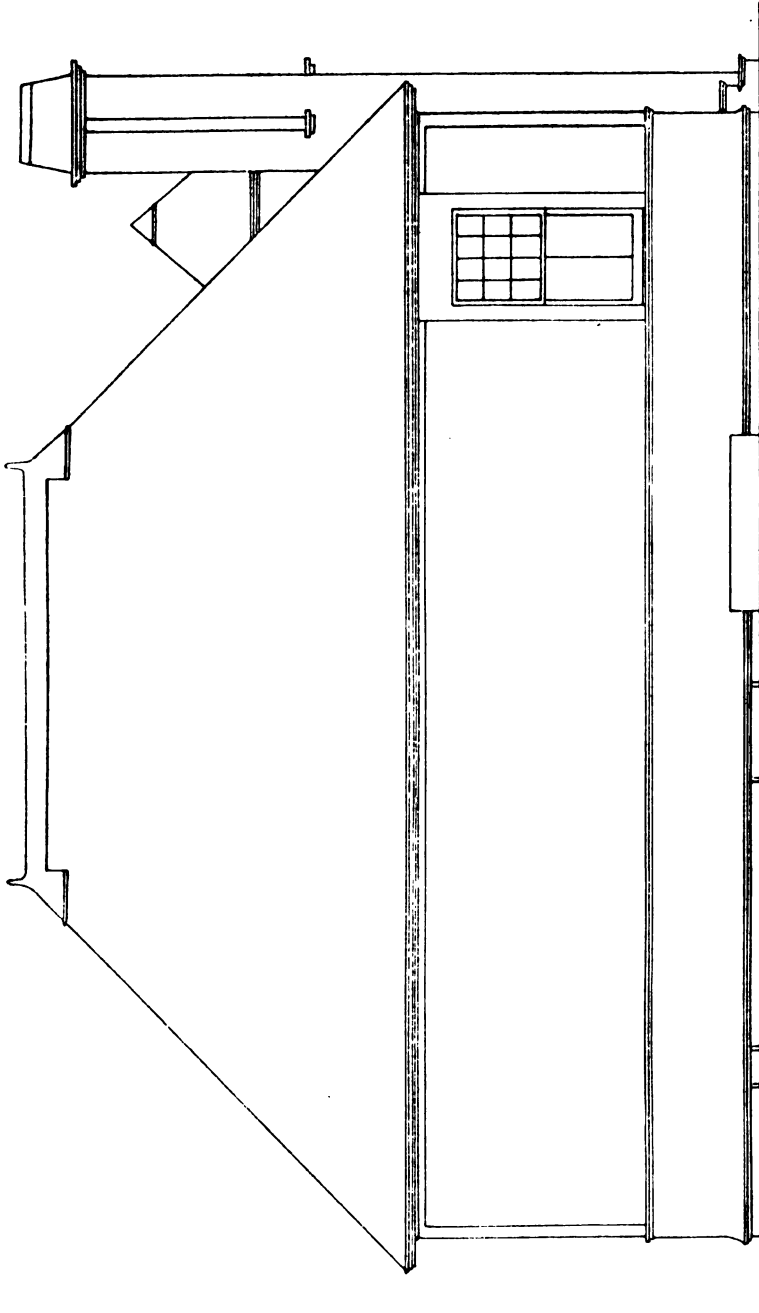
FRONT ELEVATION.

CO-OP BLDG PLAN ASSN
ARCHITECTS
106 FULTON ST. N.Y.

SCALE. $\frac{1}{4}$ " = 1'-0"

Fig. 80.

BRITISH PATENT. MANUFACTURED BY THE PATENT OFFICE.

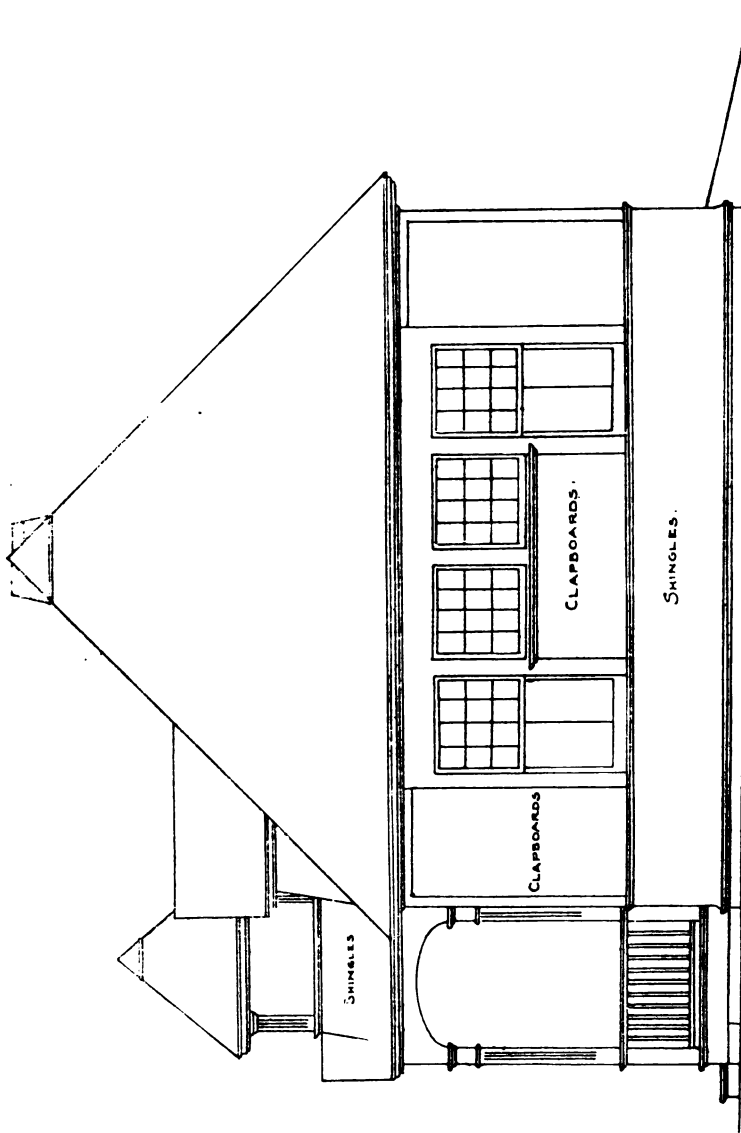


CO-OP BLDG PLAN ASSN
ARCHITECTS.
108 FULTON ST NY

REAR ELEVATION

Fig. 40.

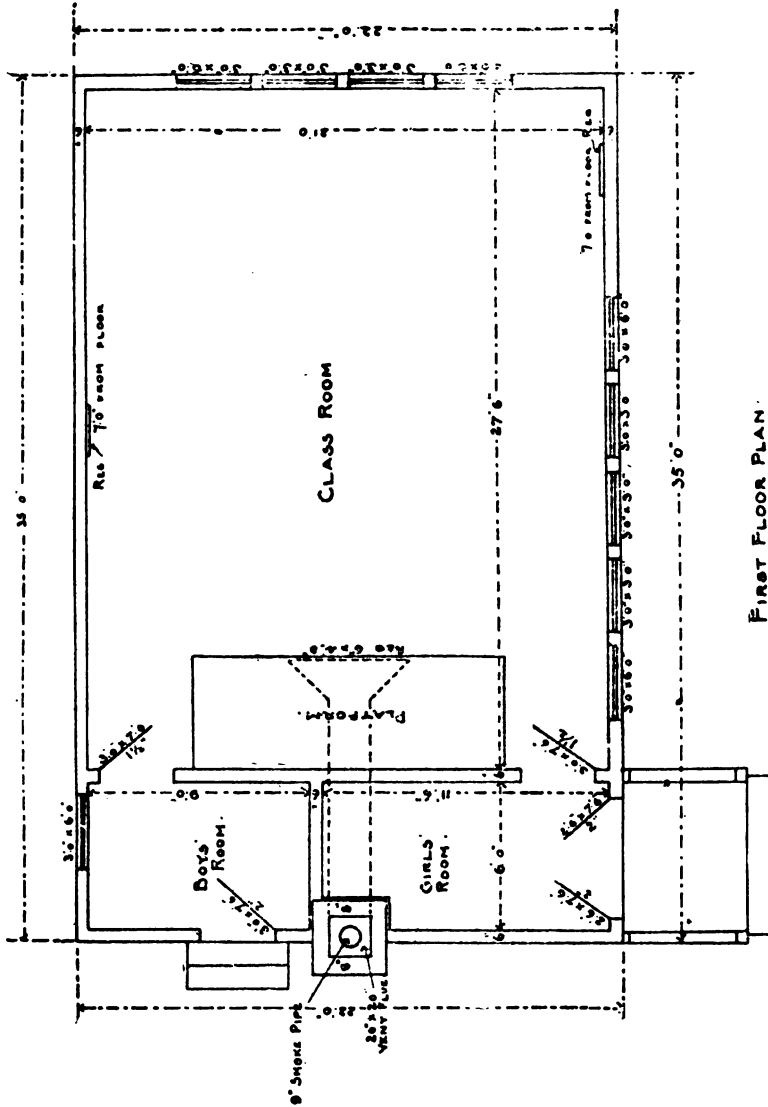
SCALE $\frac{1}{4}" = 1'0"$



SIDE ELEVATION.

SCALE 1/4" = 1 FT

COROB BROS. PLAN ASSN.
107 ARCADE ST. N.Y.

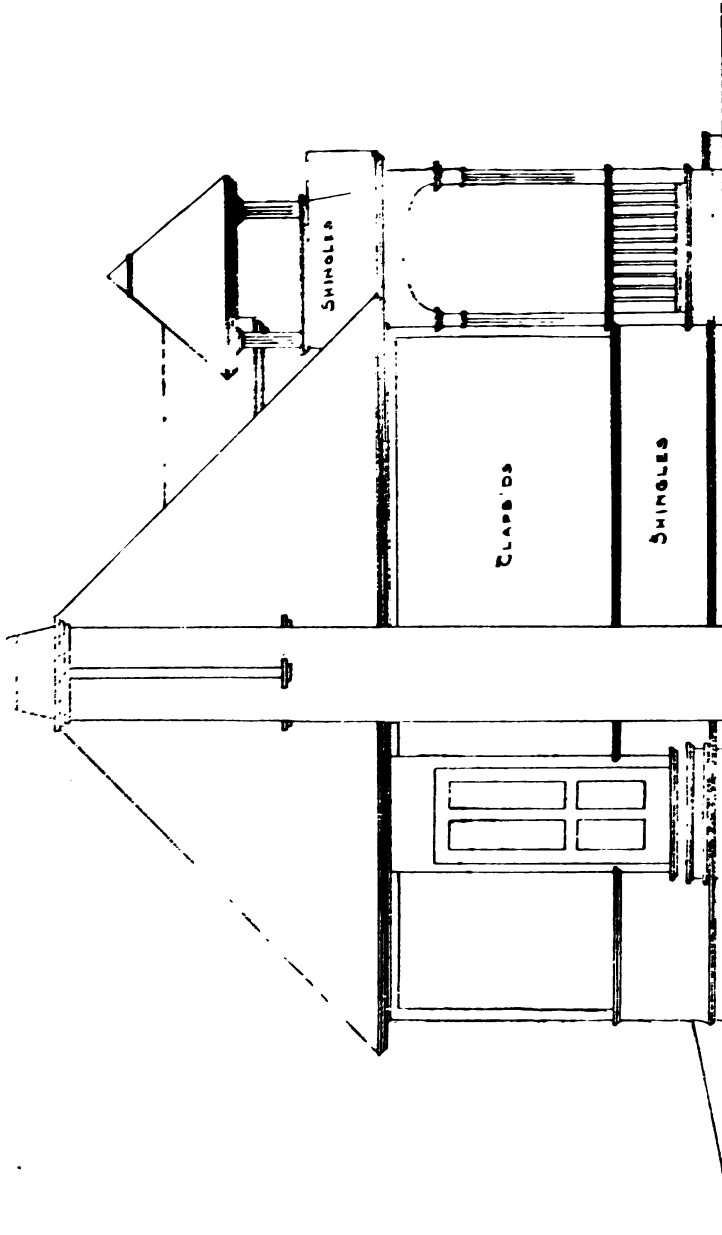


FIRST FLOOR PLAN

Co-op Bldg. Plan Assoc.
Architects
108 FULTON ST. N.Y.

SCALE: 1/8" = 1'-0"

Fig. 42.

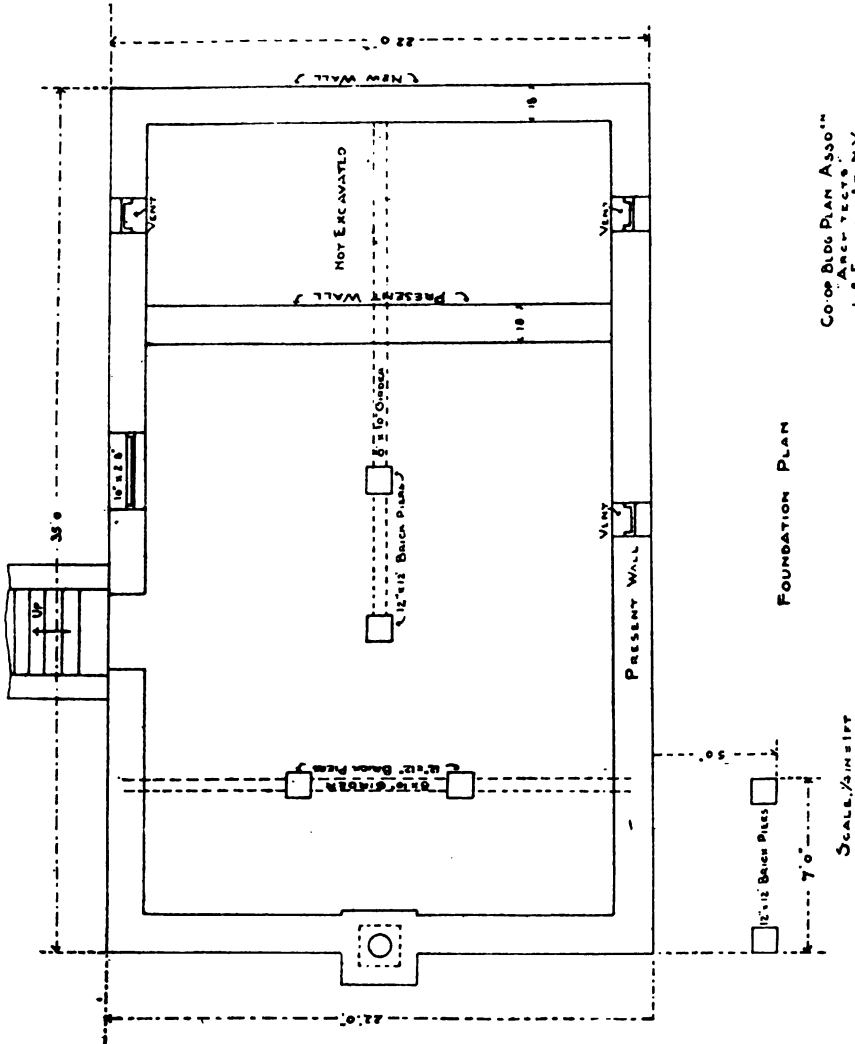


CORP BLDG PLAN ASSN
ARCHITECTS
108 FULTON ST N.Y.

SIDE ELEVATION

SCALE $\frac{1}{4} = 10'$

Fig. 48.



CO-OP BLDG PLAN ASSO^{IN}
"ARCHITECTS"
108 FULTON ST NY

Fig. 44.

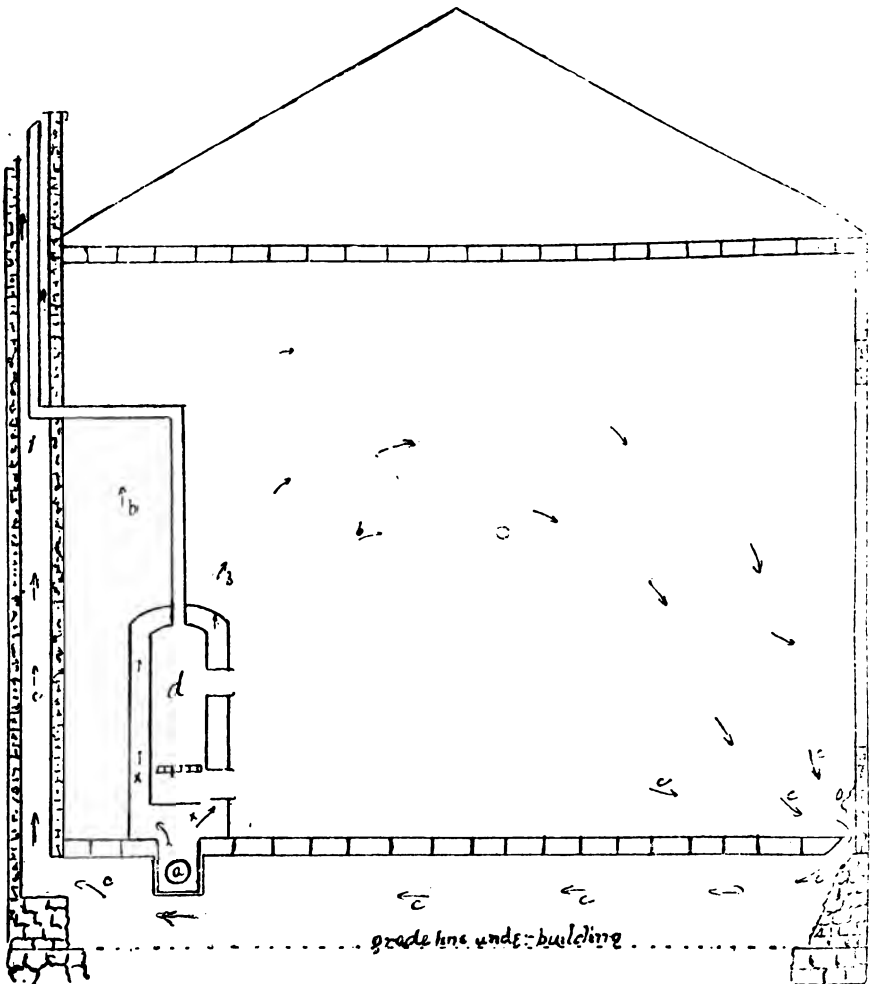


Fig. 45.

VENTILATING PLAN. FOUL AIR REGISTERS SHOULD BE JUST ABOVE THE FLOOR
ON ALL SIDES OF THE ROOM.

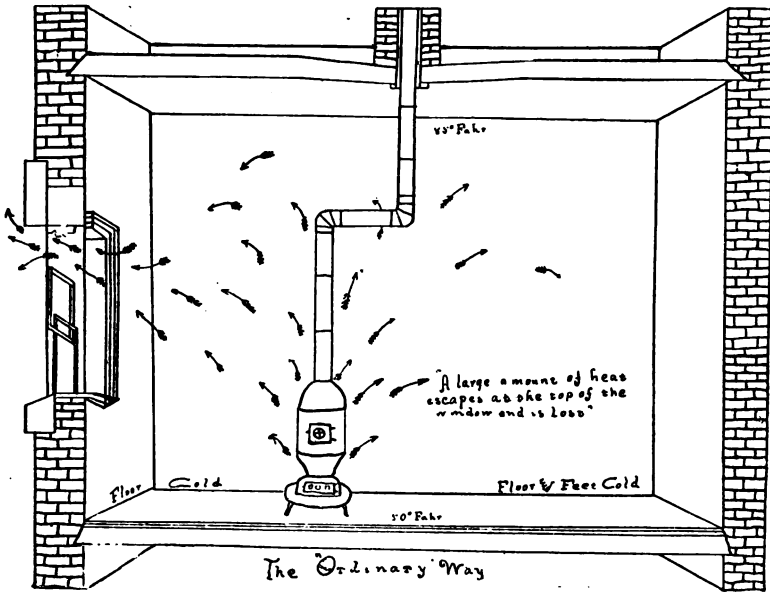


Fig. 46.

HEATING AND VENTILATION.

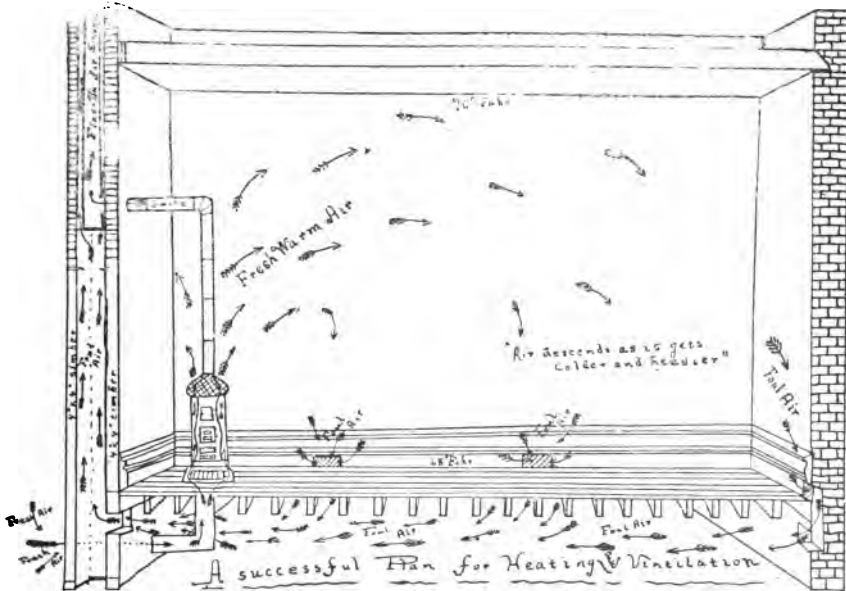


Fig. 47.



Fig. 48.

DESIGN FOR TWO-ROOM SCHOOLHOUSE. INEXPENSIVE AND ATTRACTIVE.

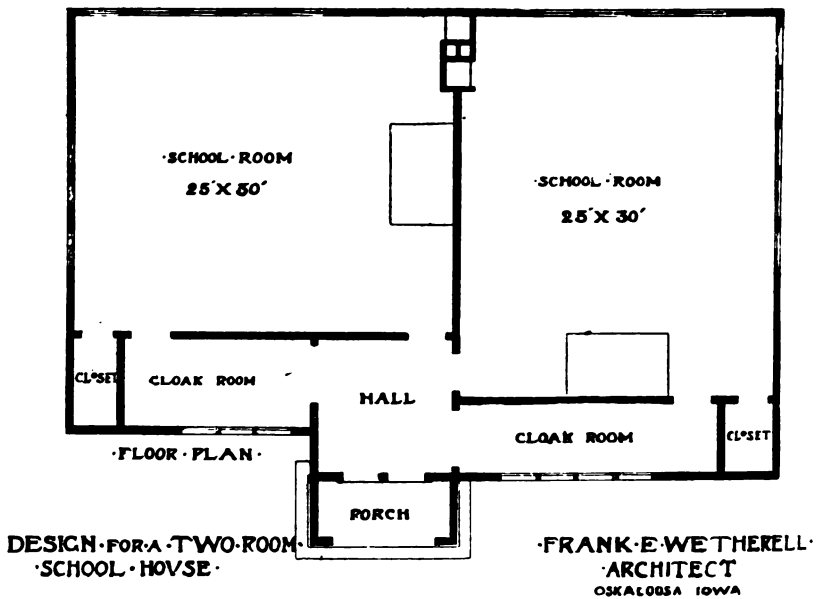
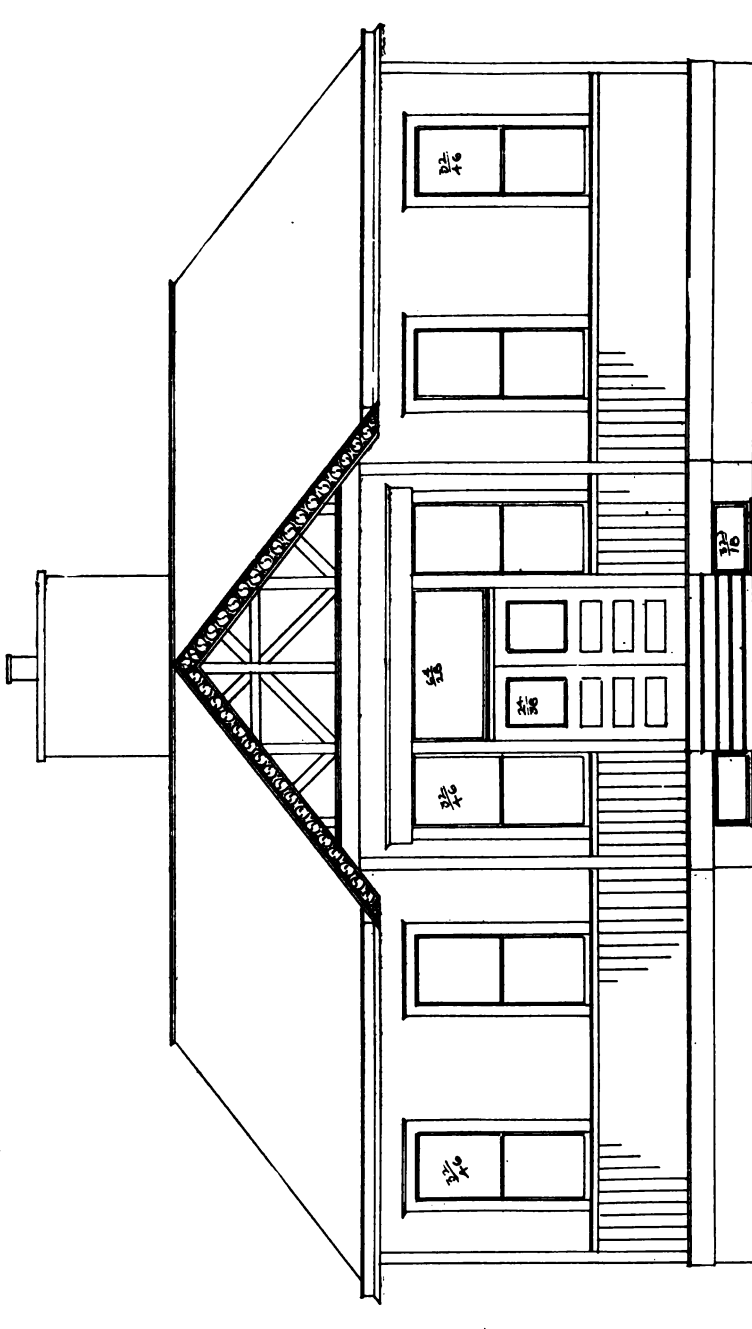


Fig. 49.

FLOOR PLANS FOR TWO-ROOM SCHOOLHOUSE.



FRONT ELEVATION.

Fig. 50.

TWO-ROOM SCHOOL. LOUIS H. GIBSON, ARCHITECT.

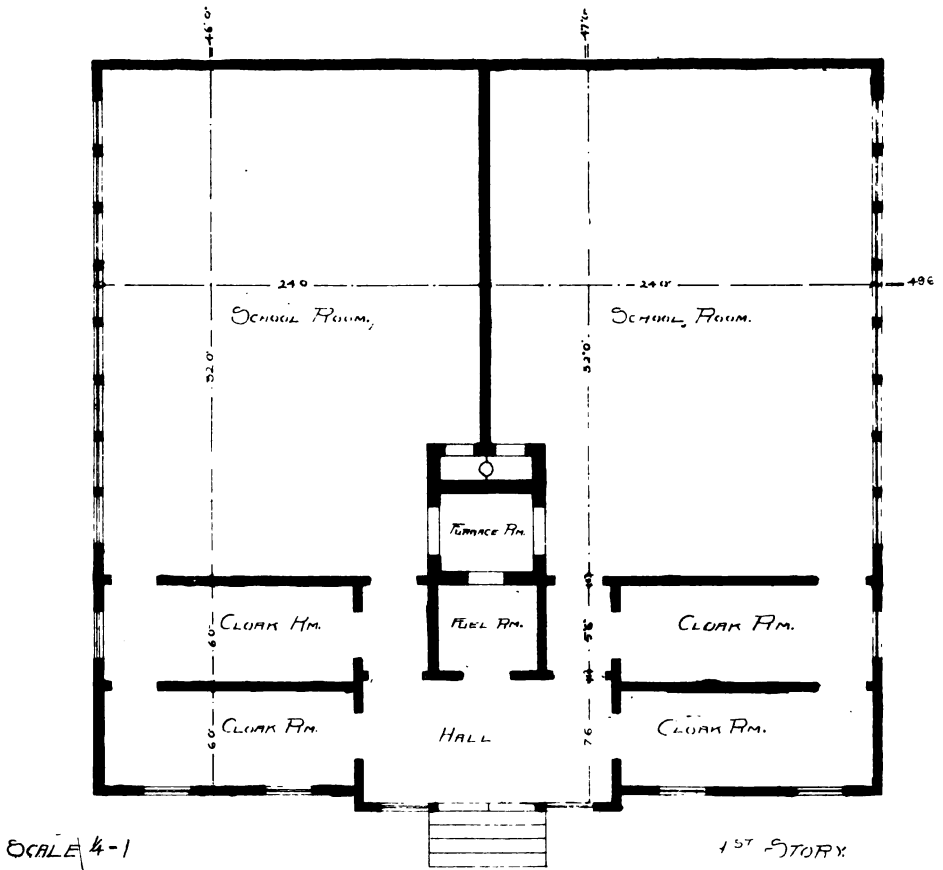
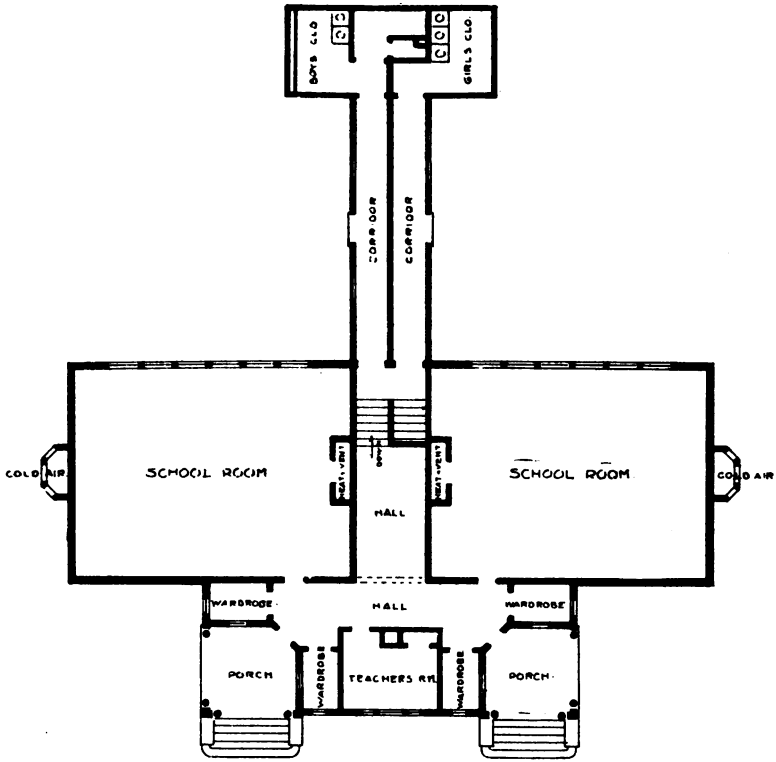
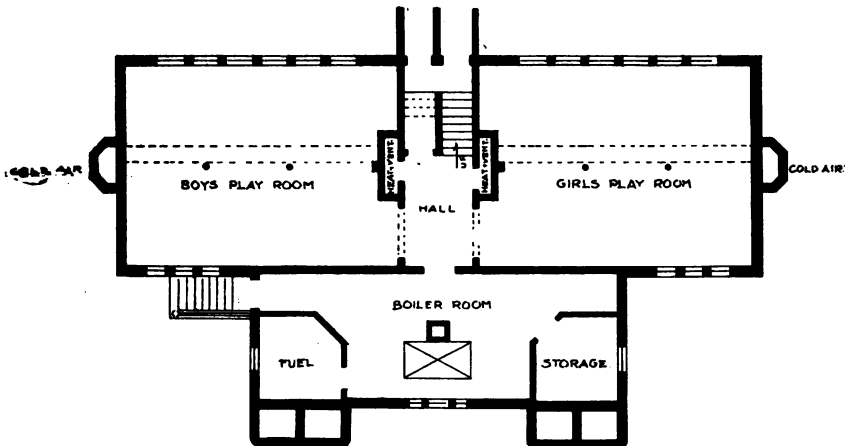


Fig. 51.

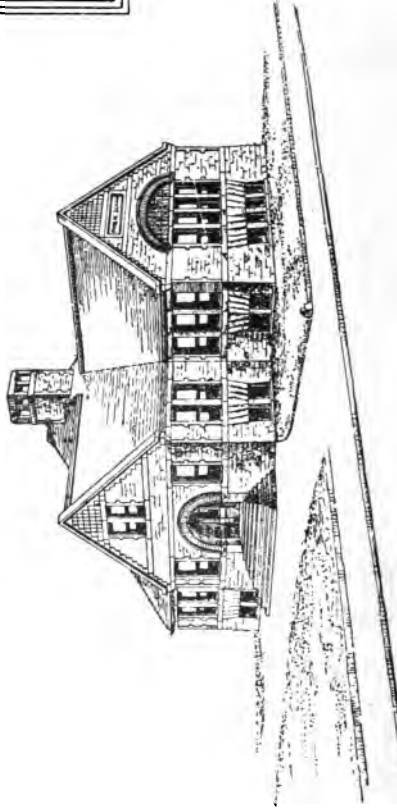
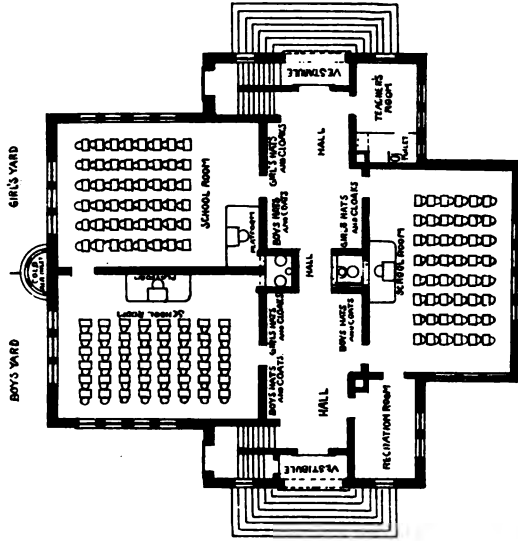
SANITARY IN EVERY RESPECT. INEXPENSIVE.



~ FIRST FLOOR PLAN ~



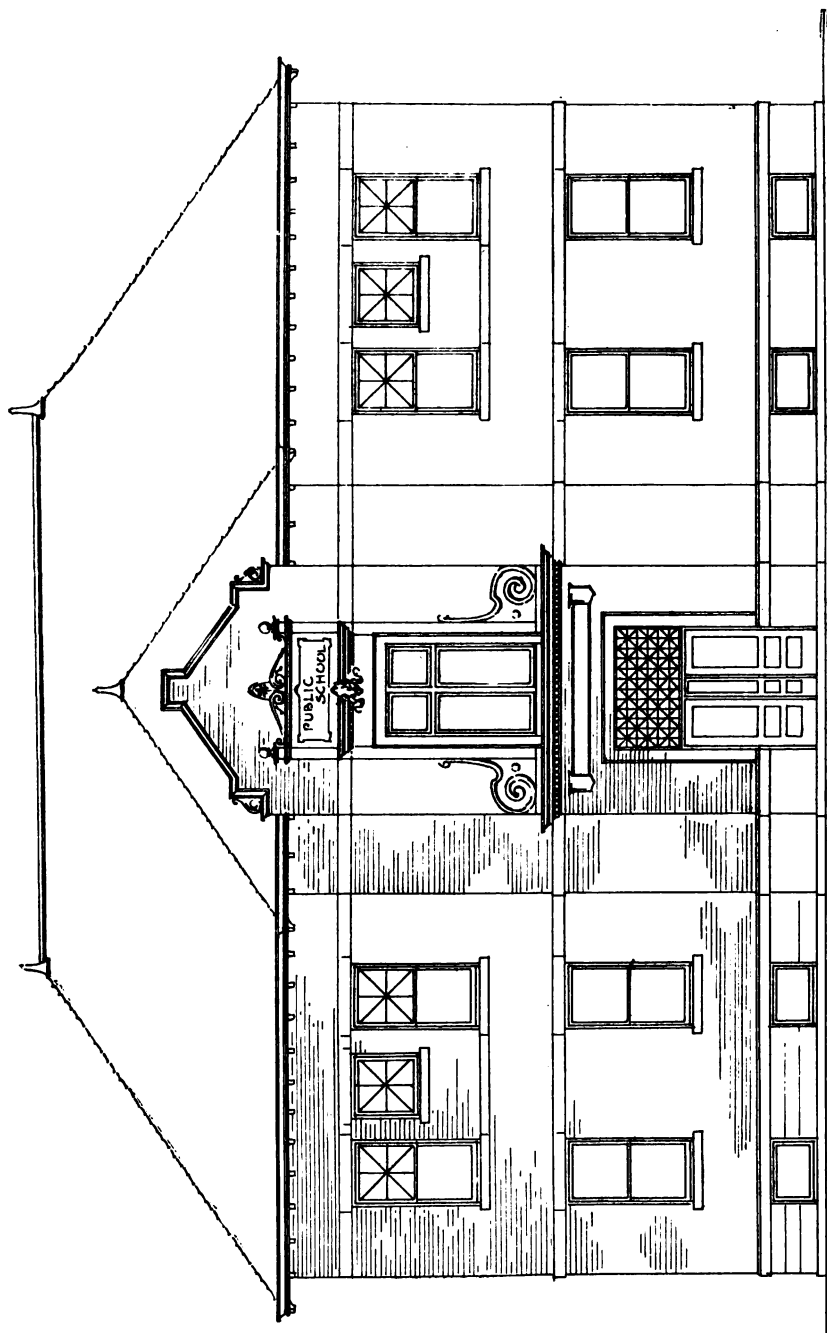
~ BASEMENT PLAN ~



PERSPECTIVE

Warren R. Briggs, Bridgeport Conn. ESTIMATED COST \$6609

Fig. 58.

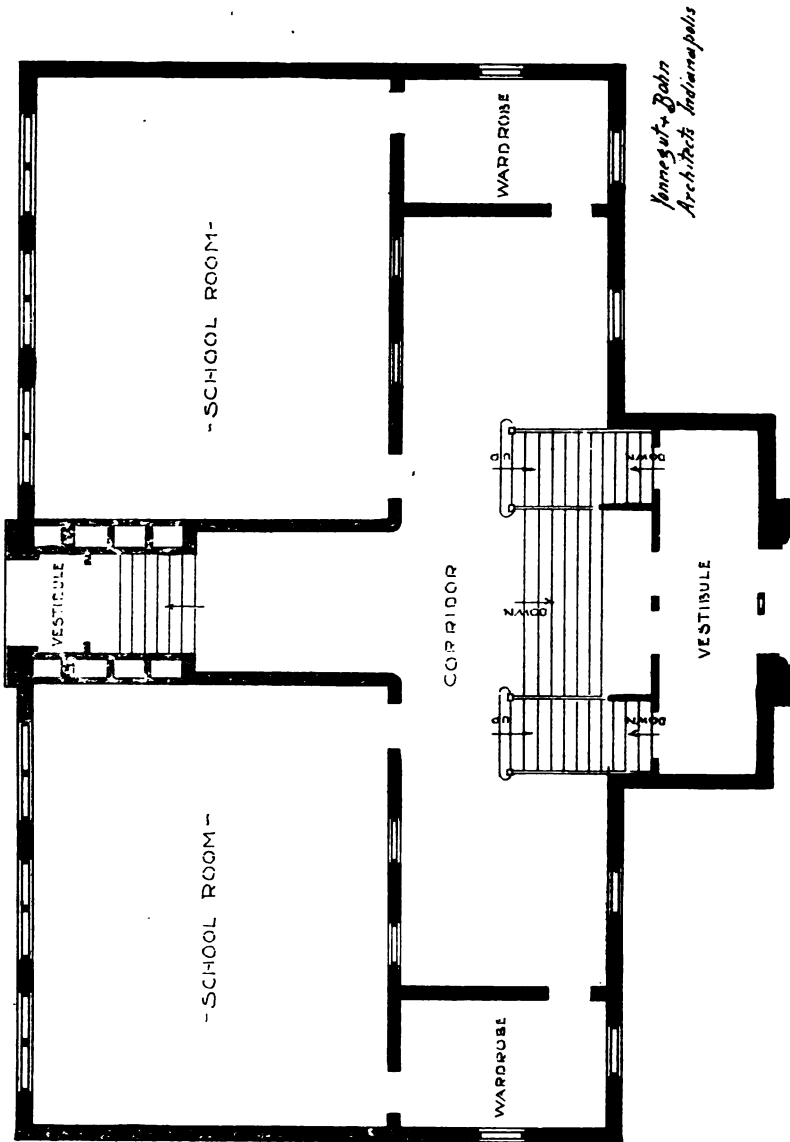


FRONT ELEVATION

Fig. 54.

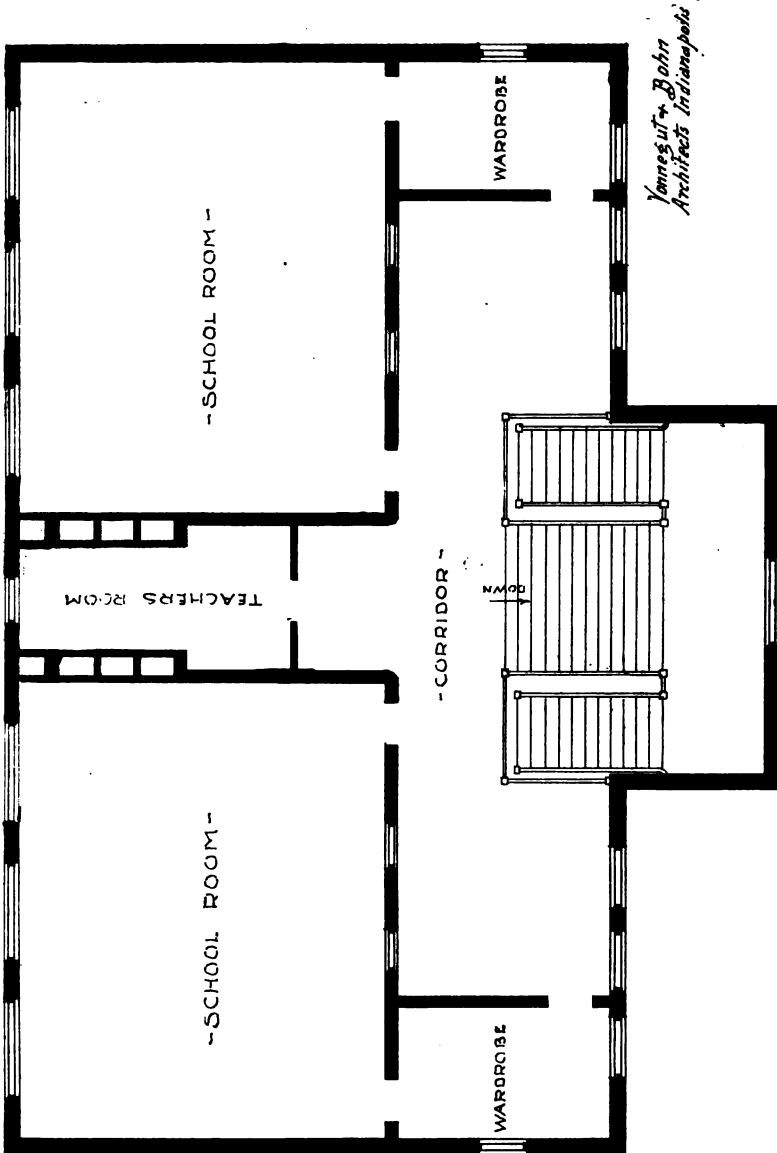
MODERN IN EVERY RESPECT. (See Figs. 55 and 56.)

*Kennequitt & Bohn
Architects, Indianapolis*



-FIRST FLOOR PLAN-

Fig. 55.



- SECOND FLOOR PLAN -

Fig. 56.

Figures 57, 58, 59 and 60 show New Garden Township School Building, Fountain City, Wayne County, Indiana.

The architectural as well as the utilitarian side of the building has been carefully considered and carried out. The colonial style of architecture has been employed for the exterior treatment of the building, imparting a monumental, quiet and dignified appearance. The exterior is executed in selected red brick, laid with a white joint, with oölitic limestone trimmings. Fluted pilasters support the pediment on the front facade. The main entrance is characterized by a colonial doorway.

The building contains an area of 6,400 square feet, containing four schoolrooms on the first floor, each 25 by 30 feet, a high schoolroom 33 by 42 feet, a recitation room and an office on the second floor. The corridor on the first floor 24 by 42 feet, centrally located, commands a full view of entrances to schoolrooms, cloakrooms and stairways. The girls' toilet room is located on the first floor, accessible from the girls' entrance from the rear of building. Each schoolroom is provided with two cloakrooms, one each for boys and girls.

There are three entrances to the building; the main entrance in front is wide and spacious, with easy steps to first floor. The rear of the building is provided with two entrances, one each for boys and girls. From these entrances access to the basement is obtained, with separate stairways leading to the exercise rooms in the basement. The boys' toilet room is located in the basement. The entire basement is cemented. The height of the basement is 8 feet 6 inches; the first story is 13 feet and the second story 14 feet 6 inches. The windows are so arranged that the light is admitted to the left-hand side of the pupils; the windows are quite large and extend to the ceiling, thus throwing the light to the farther side of the room. The half windows are to the rear of the pupils, admitting light rather on the principle of a skylight; this method of lighting has proved to be most satisfactory, as the light can be controlled and thrown to any part of the room by using blinds that can be lowered from the top and raised from the bottom. At the side of each schoolroom closets are provided for the keeping of books, etc.

Woodwork has been eliminated as much as possible for hygienic and sanitary reasons. All windows have plastered jambs with rounded corners. The wainscoting in all schoolrooms, cloakrooms and halls is hard plaster with a 3-inch wood cap. The wainscoting is painted with enamel paint, making it absolutely impervious to dampness of any kind.

All the doors and interior finish (where used) is of cypress finished natural wood. The stairway leading to the second floor is easy and roomy, having 6-inch risers and 13-inch step, 5 feet 6 inches wide.

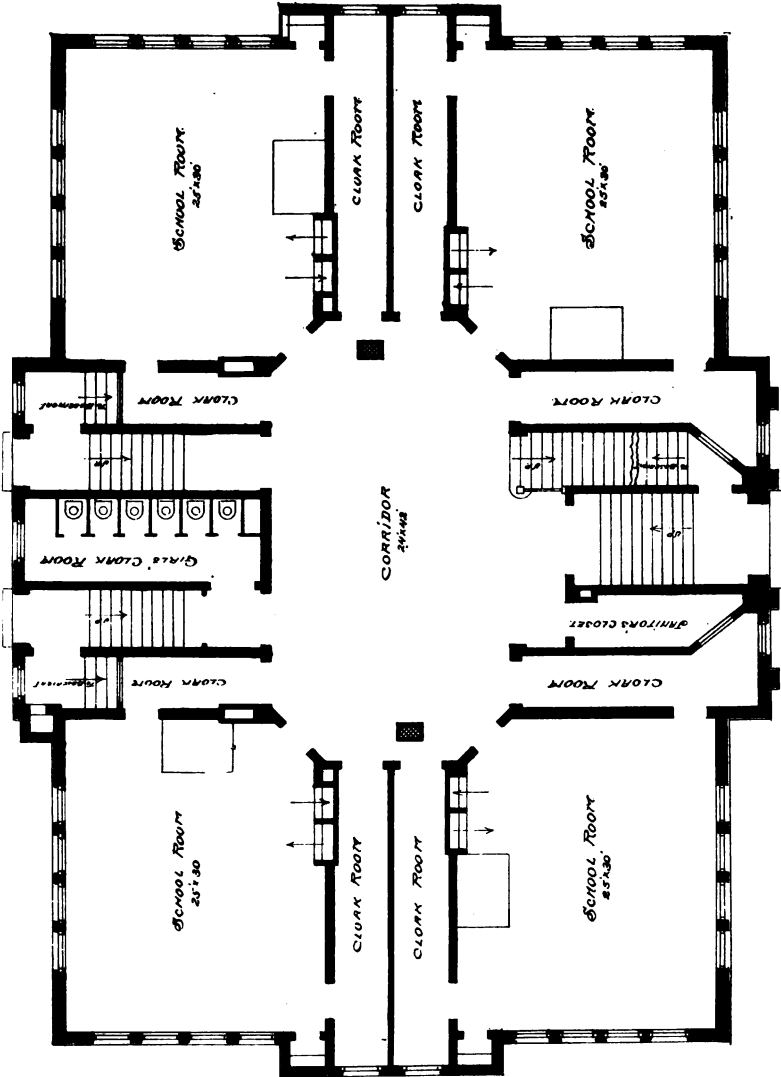
All corridors, cloakrooms and high schoolroom have the walls and ceilings tinted with water colors.

The plenum (or blower) system of heating and ventilation has been most carefully carried out, and installed by Messrs. Kruse & Dewenter, of Indianapolis, Ind. The plant consists of a battery of three furnaces centrally located and an 84-inch steel housed blower located under the front entrance steps. Power is transmitted to the blower by an 8-horsepower gas engine. By this system the cold fresh air is taken from the outside, delivered to the blower and forced through the furnaces and thence to the various rooms. The warm air enters the various rooms above the blackboards through registers, with an area of 4 feet, at a velocity of 5 feet per second, giving from 30 to 35 cubic feet per pupil per minute, and changing the air in the entire room every eight minutes, or about eight times per hour. The foul air is removed from the rooms at the floor line, through vent shafts. By this method a temperature of 70 degrees F. is maintained irrespective of the changes in the open atmosphere. A variation not to exceed two to three degrees above or below a given level in any of the rooms is never experienced. This system supplies to the rooms, under all conditions of indoor and outdoor atmosphere, a constant volume of warmed fresh air, without creating objectionable draughts, and in such a manner as to be thoroughly and effectually distributed throughout the room.

The plant is so arranged that the gravity system alone can be used, as well as as the blower system.

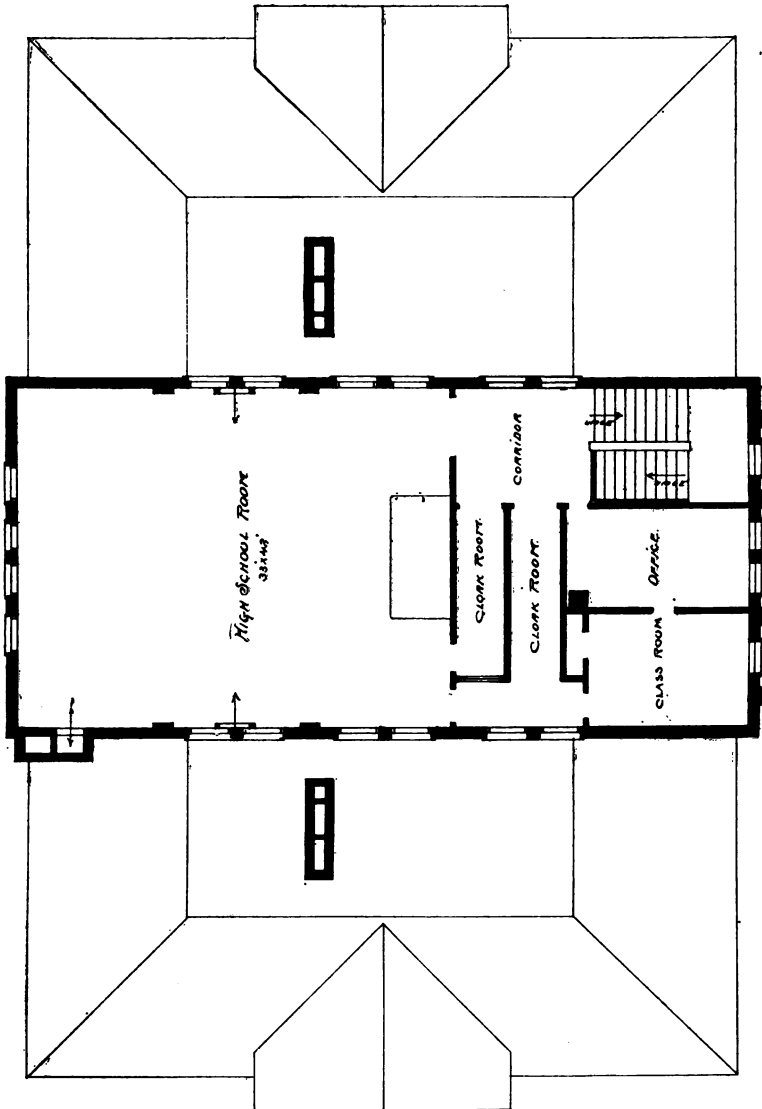


Fig. 57.
TOWNVILLE HIGH SCHOOL, FOUNTAIN CITY, IND.



W. S. Kaufman, Archt.
Richmond, Ind.

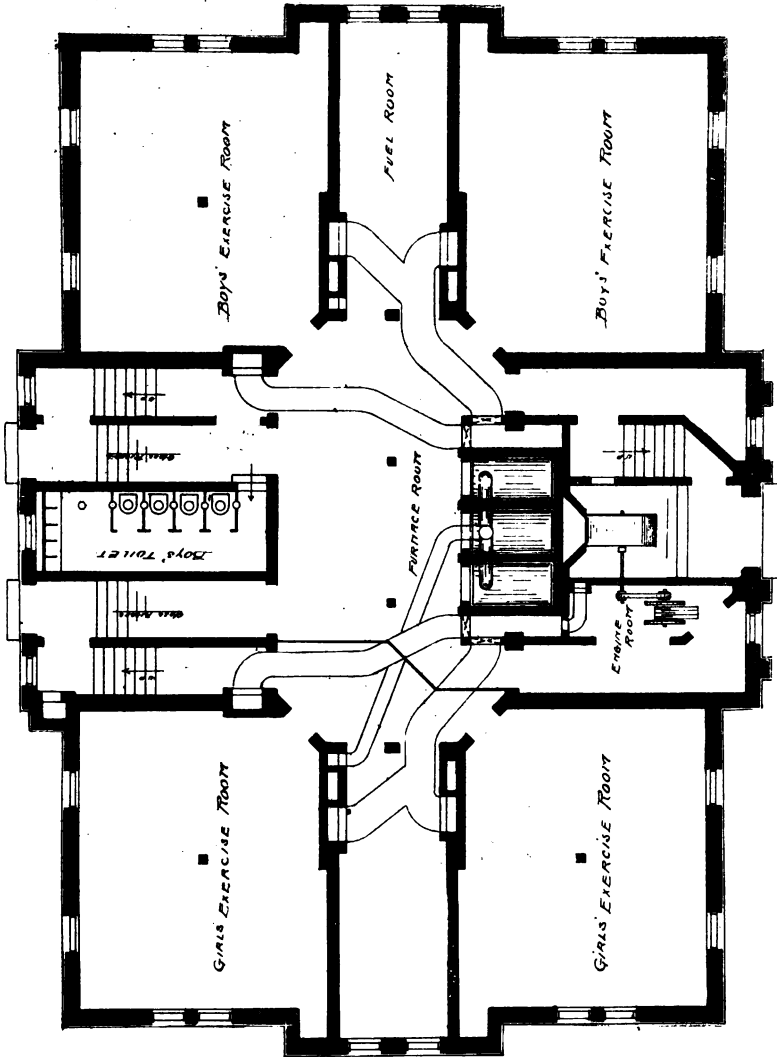
FIRST FLOOR PLAN.
FOUNTAIN CITY SCHOOL BLDG.
Fig. 58.



W. A. Kaufman, Architect
Richmond, Ind.

SECOND FLOOR PLAN.
FOUNTAIN CITY SCHOOL BLD'G.

Fig. 59.



W S Kayman, Archt.
Richmond Ind.

BASEMENT PLAN.
FOUNTAIN CITY SCHOOL BLDG

Fig. 60.

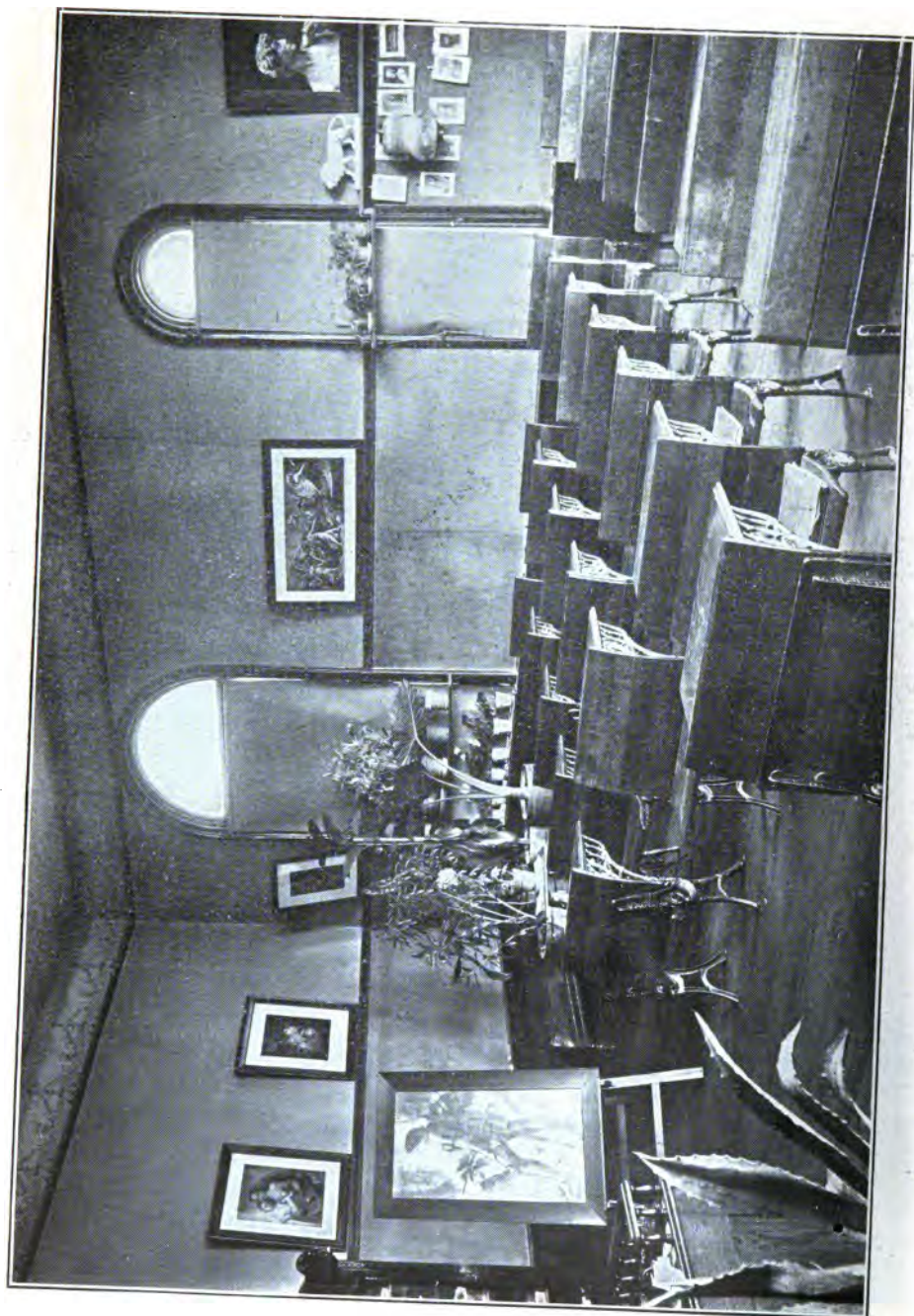


Fig. 63.

FINLEY SCHOOL, RICHMOND, IND.



Fig. 62.

A WELL EQUIPPED RURAL SCHOOL, No. 5, OLIVE TOWNSHIP, ST. JOSEPH COUNTY.



Fig. 63.
FINLEY SCHOOL, RICHMOND, IND



Fig. 61.

GRAMMAR ROOM, RICHMOND.



Fig. 65.

RURAL SCHOOL, BOSTON TOWNSHIP, WAYNE COUNTY.



Fig. 66.

RURAL SCHOOL, WASHINGTON TOWNSHIP, PORTER COUNTY.

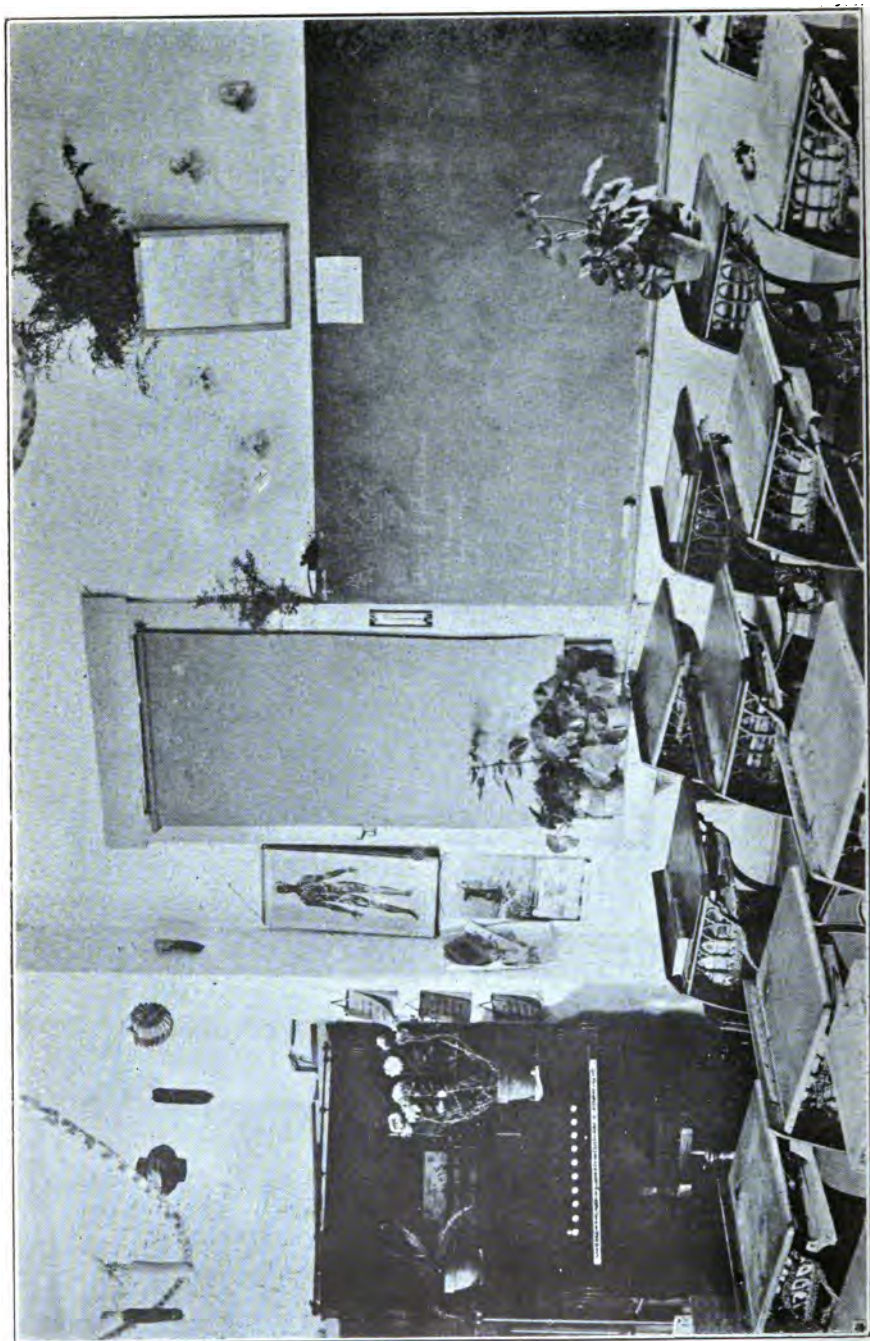


Fig. 67.
TOWNSHIP SCHOOL, WAYNE COUNTY.



Fig. 68.

RURAL SCHOOL, WAYNE TOWNSHIP, WAYNE COUNTY.



Fig. 69.

CORRIDOR IN JEFFERSON BUILDING, MUNCIE, IND.



Fig. 70.
UPPER CORRIDOR, JEFFERSON BUILDING, MUNCIE.



Fig. 71.

INDIANAPOLIS SCHOOLROOM, WELL DECORATED.



Fig. 72.
INTERIOR GRAMMAR ROOM, MUNCIE.

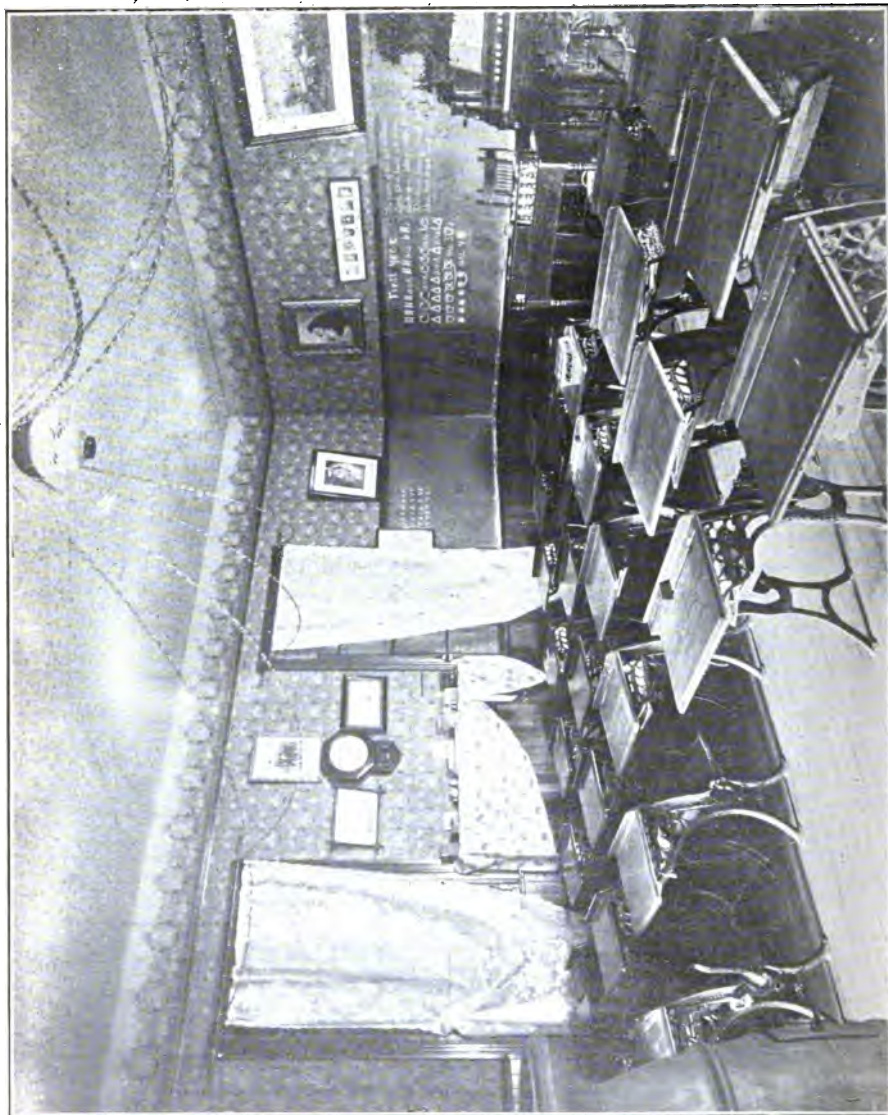


Fig. 73.

HARVARD UNIVERSITY - DRYDEN LIBRARY



Fig. 74.
WELL DECORATED.

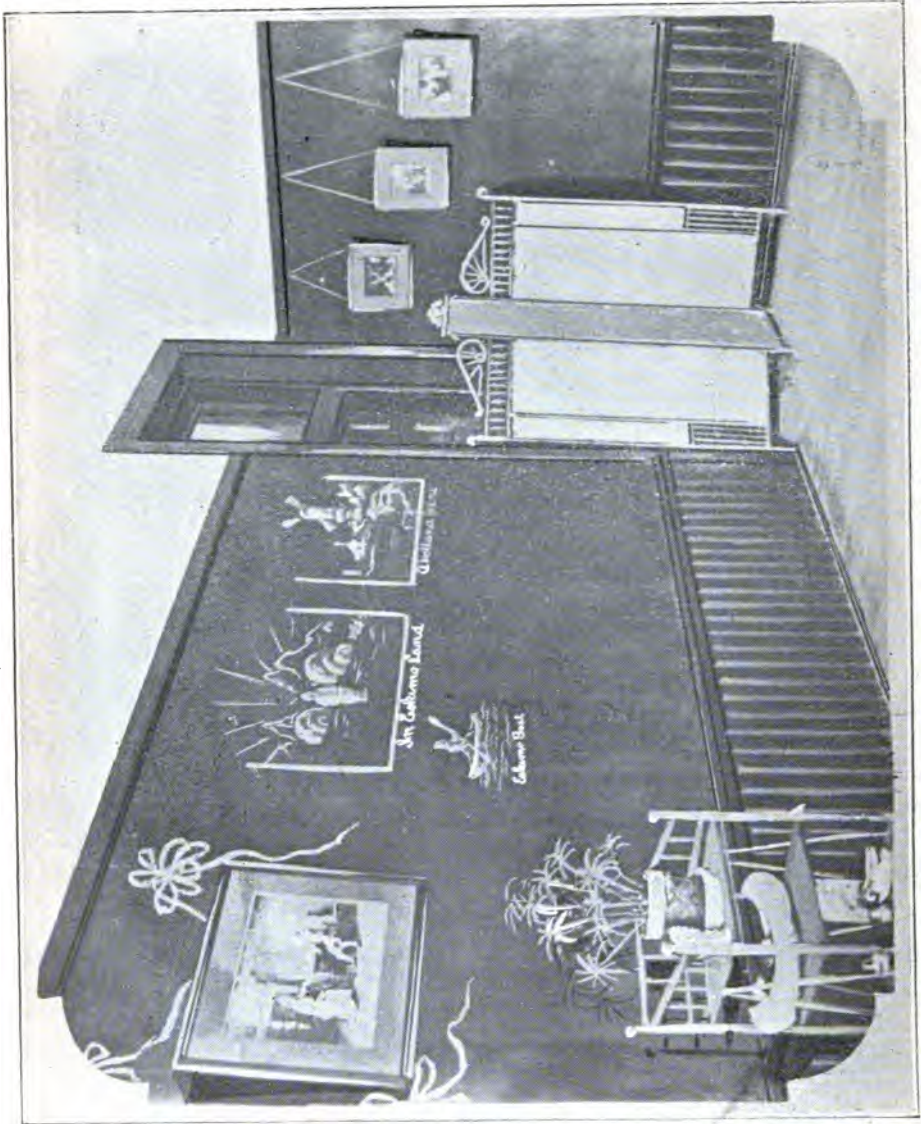


Fig. 75.
A SCENARIUM OF THE DESTRUCTION OF THE BLACKBOARD.



Fig. 76.
A WELL DECORATED SCHOOL ROOM.

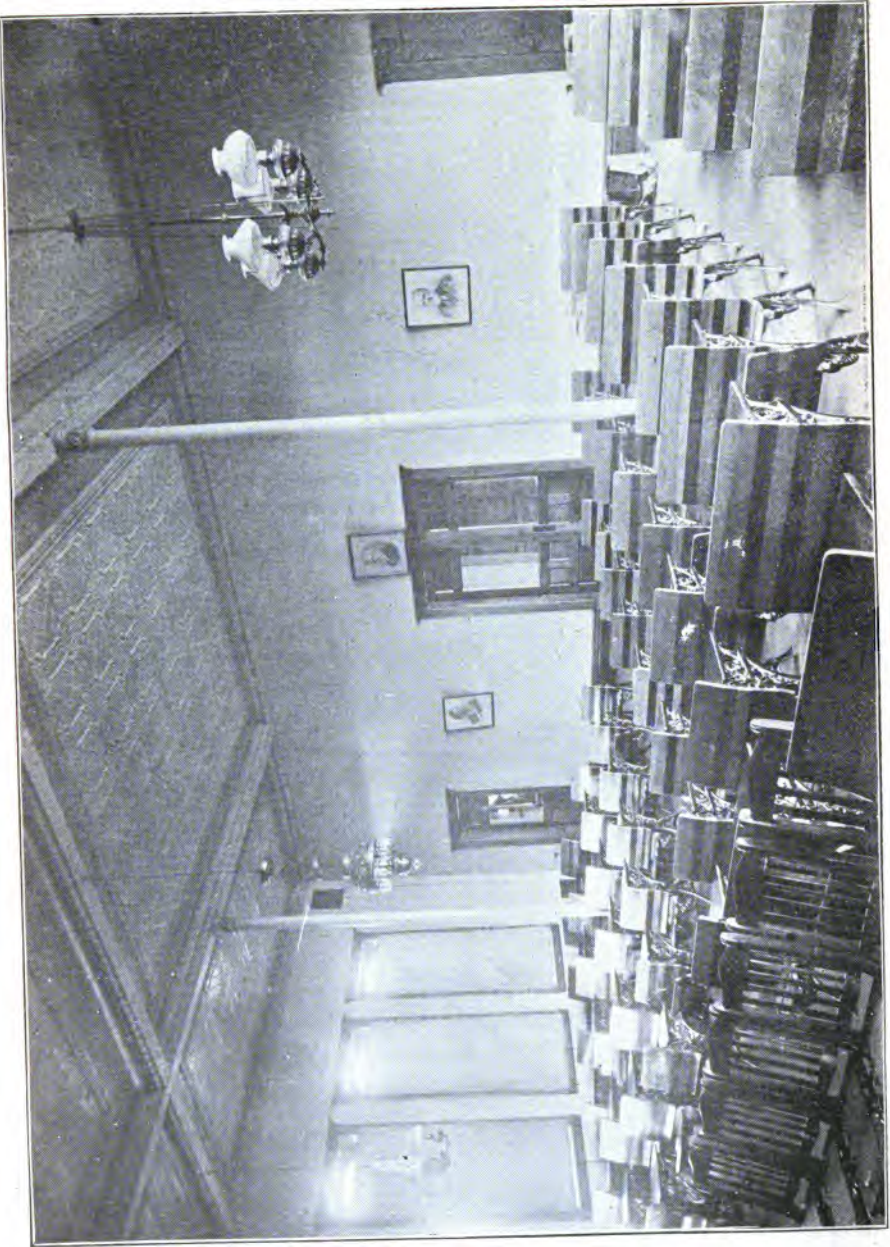


Fig. 79.

A WELL-DECORATED RURAL SCHOOLROOM.



Fig. 78.

A DURABLE AND ARTISTIC SCHOOLHOUSE STAIRWAY.



Fig. 79.

A WELL-DECORATED RURAL SCHOOLROOM.



Fig. 80
AN INDIANAPOLIS INTERIOR.

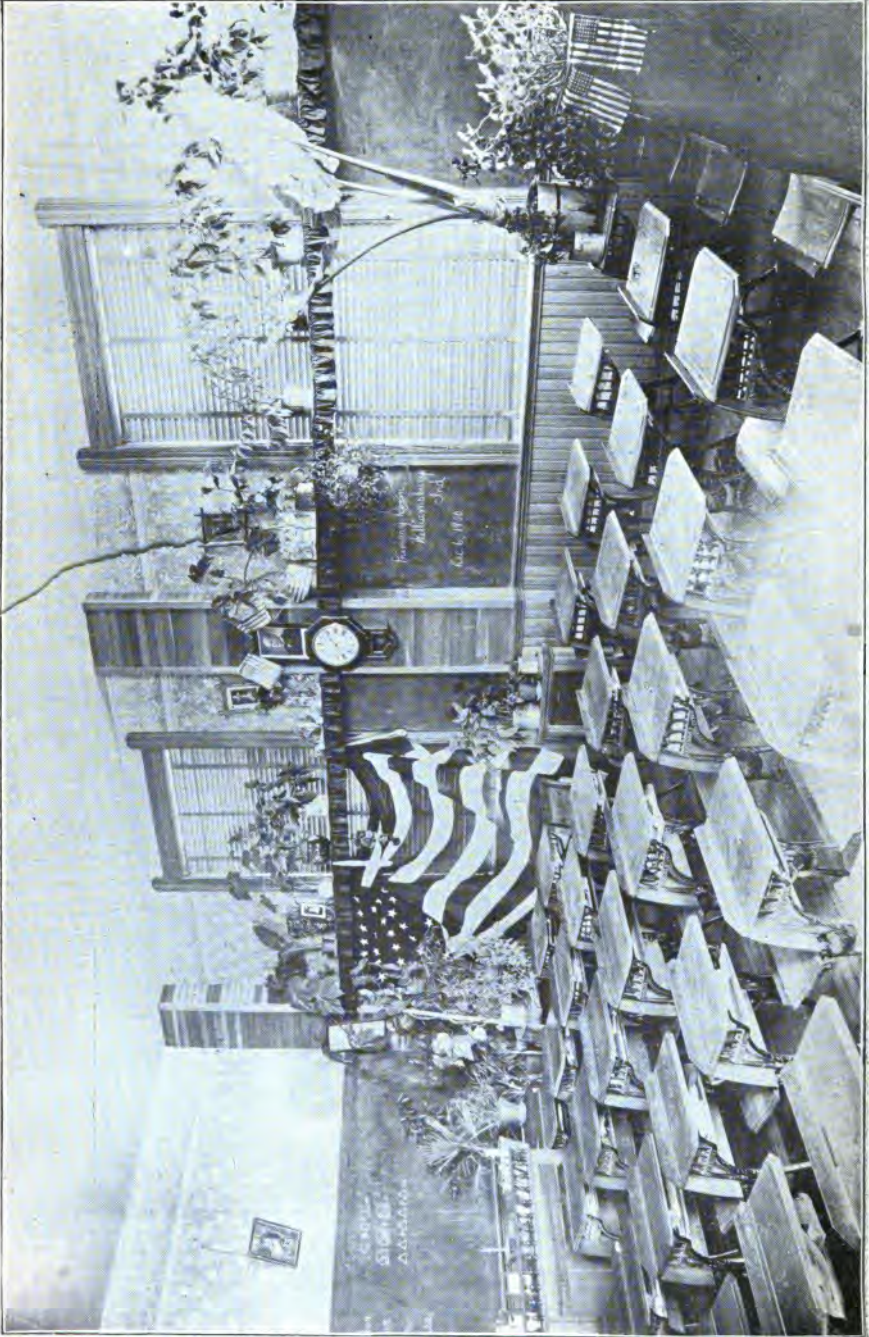


Fig. 81.
A CHEERFUL SCHOOLROOM. TOWNSHIP SCHOOL.



